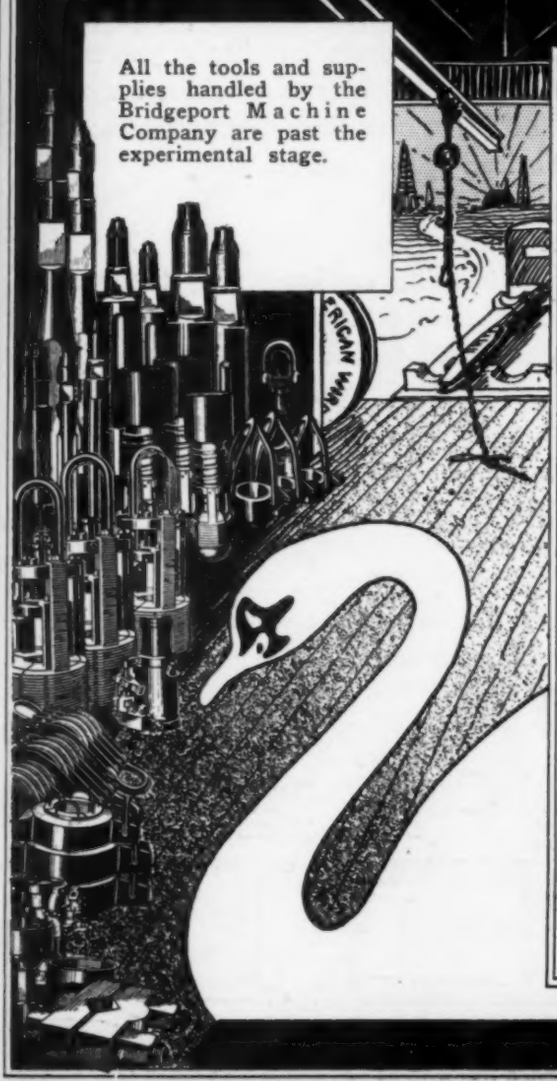
10¢ A COPY

# The OIL WEEKLY

January 29, 1926 Volume 40. No. 6

BRIDGEPORT

All the tools and supplies handled by the Bridgeport Machine Company are past the experimental stage.



THE stores of this company are always scenes of unusual activity.

Bridgeport tools are in demand—for sale or rent. The policy of this company is to furnish prompt delivery of all oil field supplies carried by them. The stores are open day and night always ready for emergencies as they arise in the oil fields.

This activity, added to the company's practice of handling only tools and supplies whose worth has been proven, has gained for it a reputation that is approached by but few houses in the field.

The Bridgeport oil field stores are found at the following points:

| | | |
|---|---|---|
| Wichita, Kans. | Tulsa, Okla. | Braman, Okla.* |
| Russell, Kans.* | Stroud, Okla. | Pawnee, Okla.* |
| Gorham, Kans. | Depew, Okla. | Ranger, Tex. |
| Eldorado, Kans. | Wetumka, Okla. | Panhandle, Tex.* |
| Winfield, Kans. | Tonkawa, Okla. | Breckenridge, Tex. |
| | Garber, Okla. | Marietta, Ohio |

*A complete stock of contractors' supplies carried at points indicated by a star.*

THE BRIDGEPORT MACHINE COMPANY

General Office and Works WICHITA, KANSAS

REED ROCK BITS

# A Slush Lubricated Tool

The Reed Rock Bit is entirely lubricated by the slush commonly used in the drilling of all wells. The head of this bit is equipped with a series of holes directly above the cutters, permitting slush to descend directly upon them and keeping them free from cuttings and giving a clean surface upon which to operate.

The principle of slush lubrication is scientifically right. When a slush pit is once filled and drilling operations begin, you have at hand a natural lubricant which may be used in copious quantities, both for cleaning and lubricating the rock bit.

The cross-cutting action of this bit, with its sharp, twisting, cutting blows, doubly delivered at each rotation of the drill stem, guarantees that the bit will cut faster than any other rock tool ever yet devised.

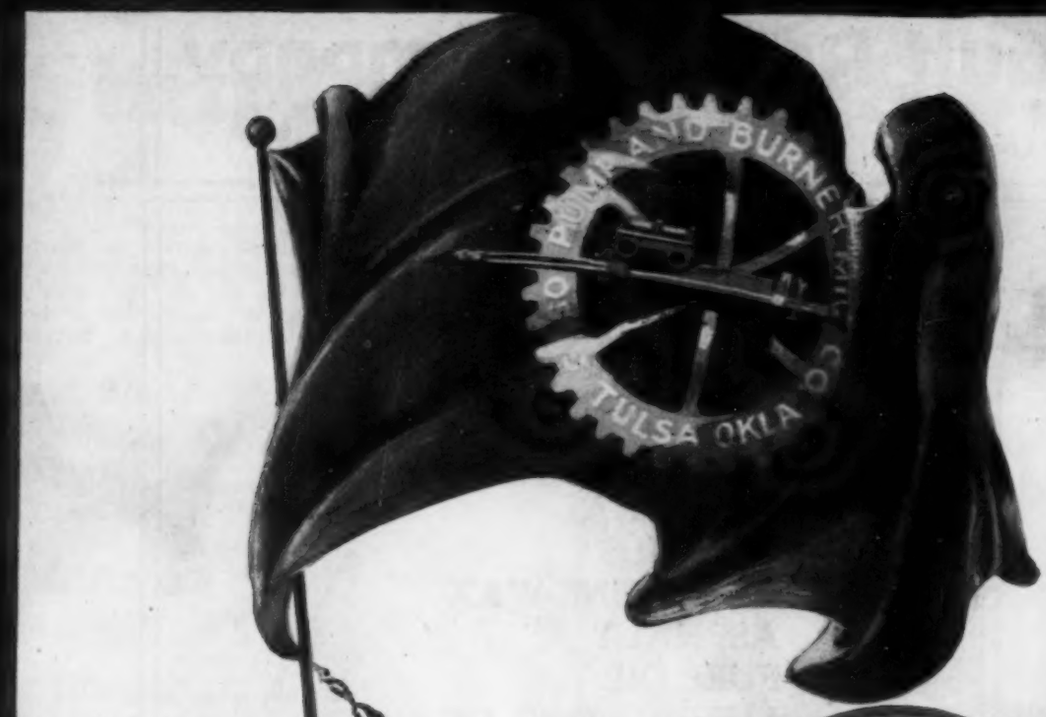
The performance of the last several years and records of drilling operations in practically every field, show that the Reed Rock Bit will average at least a third more rock in ordinary formation than will any other rock bit in the same time.

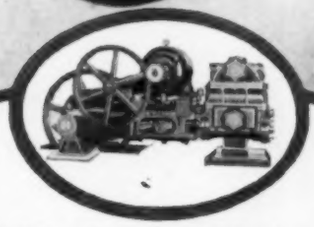
**Reed Roller Bit Company**

NEW YORK HOUSTON LOS ANGELES

# REED ROCK BITS

TOPPING the FIELD



FROM an humble beginning in 1915 to the important position in oil-industry pump manufacture that we now occupy, is remarkable progress—but we claim no special credit for it. The natural advantages we have to offer are so important that any one making an impartial investigation finds it simply impossible to make any other choice. Consider for yourself:

1—Central location, assuring promptest possible delivery of pumps and parts;
2—Specialization—one industry to serve, one line to manufacture;
3—A principle of *fewer* but *stronger* parts;
4—A system of checking and inspecting that makes "lemons" impossible.
5—A record of having supplied more than 8,000 dependably built and successfully operating pumping units.

*Our new catalogue is now ready.*
*Have you written for your copy?*

GASO PUMP & BURNER MFG. CO
TULSA, OKLA.

GASO PUMPS
For every oil-industry need

# Gulf Refining Company

OKLAHOMA
TEXAS
LOUISIANA

*Refiners of* PETROLEUM

GASOLINE
REFINED OIL
NAPHTHA
GAS OILS
PARAFFINE WAX
ASPHALT
FUEL OIL
LUBRICATING OILS
CYLINDER
ENGINE
CORDAGE

## Red and Pale Paraffine Oils

**General Sales Offices: PITTSBURGH, PA.**

District Sales Offices:
NEW YORK, HOUSTON, ATLANTA, BOSTON, NEW ORLEANS, PHILADELPHIA

Ocean Terminals

Beverly, Mass.
Gibson's Point, Pa.
Port Tampa, Fla.
Port Arthur, Texas

Bayonne, N. J.
Savannah, Ga.
Gretna, La.
Magazine Point (Mobile), Ala.

Galveston, Texas
Providence, R. I.
Jacksonville, Fla.
Charleston, S. C.

# 3 Tools in 1
# Simplex Super-Swab

WITH the introduction of the Simplex Super-Swab comes a new standard of efficiency—a definite assurance of better and cleaner swabbing, elimination of strains upon the wire line, a reduction in swabbing time and a substantial saving both in the outlay for equipment and in the cost of operation. Investigate!

## *Special Features*

1

**Fishing Jobs Eliminated**

Constructed with a solid one-piece sub and stem with no threaded joints to unscrew and cause fishing jobs.

2

**Overloading Eliminated**

The Regulator can be adjusted to lift the exact amount of fluid desired.

3

**Outwears Other Swabs 50% to 100%**

Every part which is subject to hard wear is reversible, greatly prolonging the swab's life.

4

**3 Tools in 1**

The swab can be run to the very bottom of the casing and performs the function of agitating and cleaning as well as swabbing. It is an efficient agitator and screen or perforation cleaner.

5

**Only One Rubber Needed**

The special patented rubber works better than two or more rubbers of ordinary type. Thus, hundreds of dollars are saved each month in swab rubber replacements.

6

**Rubber Cannot Freeze**

The patented rubber is impregnated with graphite and is self-lubricating. It positively cannot freeze or cook to the casing wall.

7

**Rubber Gives Even Closure**

Moulded under high pressure and reinforced by incorporating a firm, fibrous core, a thorough, even closure is obtained.

8

**Swabbing Time Reduced**

Change of rubber seldom required because of great durability and only one rubber to change.

9

**Cost of Swabbing Equipment Reduced 50%**

Two Simplex Super-Swab sizes can be used for all sizes of casing. (See table of sizes.) The only adjustment necessary to change size of swab is to install cups and rubbers.

10

**Fool-Proof**

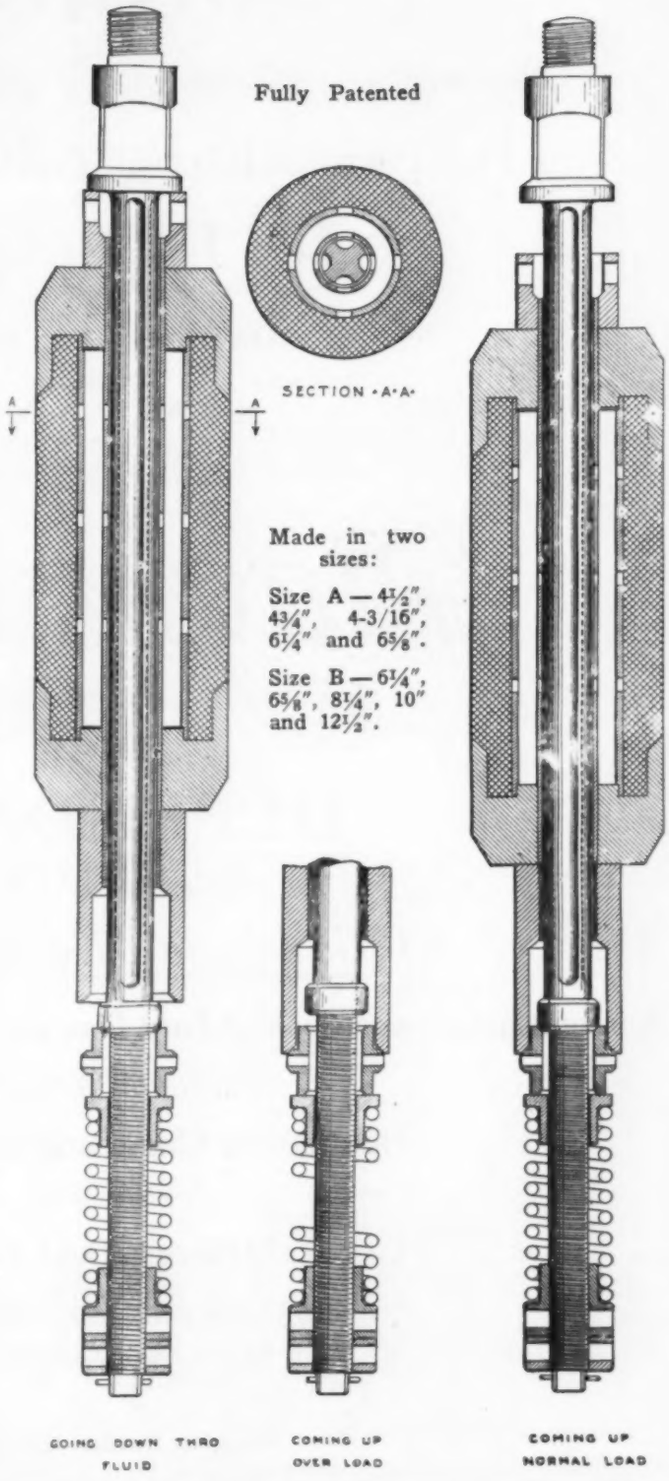
Extremely simple to assemble and easy to operate. The metal parts are practically indestructible.

**Order from any good supply house.**

*Ask for descriptive folder*

**Simplex Equipment Co.**

**629 South Spring St., Los Angeles, Calif.**




Made in two sizes:

Size A — 4½", 4¾", 4-3/16", 6¼" and 6⅝".

Size B — 6¼", 6⅝", 8¼", 10" and 12½".

# Magnolia Petroleum Company

*Producer* *Refiner* *Jobber* *Distributer*

## High Grade Petroleum Products

# FUEL OIL

**LOADING STATIONS AT**

BEAUMONT CORSICANA SABINE GALVESTON FT. WORTH
HARBOR ISLAND LULING CORPUS CHRISTI DALLAS
HERMA, ARK. MIRANDO

*MANUFACTURER OF*

**Magnolene**
REG. U.S. PAT. OFFICE

**THE DEPENDABLE LUBRICANT**

*"A Grade for Each Condition*

**For satisfactory operation of Ford Cars use Magnolene Motor Oil for Fords**

*REFINERIES LOCATED AT*

**Beaumont, Corsicana and Ft. Worth**

---

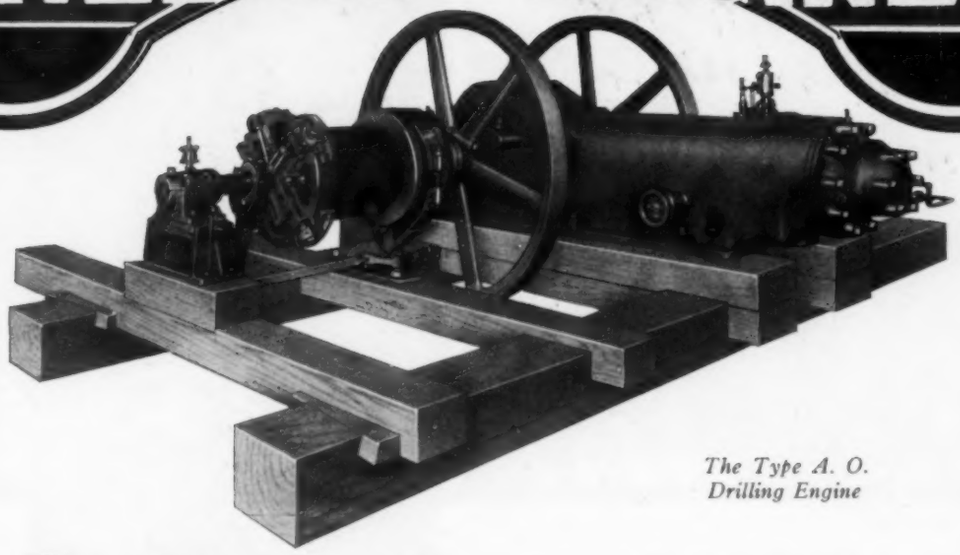
**General Offices: DALLAS, TEXAS**

DIVISION SALES OFFICES:

DALLAS HOUSTON FT. WORTH SAN ANTONIO OKLAHOMA CITY LITTLE ROCK
AMARILLO EL PASO

*Inquiries Respectfully Solicited*

# FRANKLIN VALVELESS DRILLING ENGINES



*The Type A. O. Drilling Engine*

## The Wonder Engine for Drilling

We have set a standard that only FRANKLIN can meet,—a standard of performance that placed Franklin Valveless Oil Drilling Engines in a class by themselves.

The saving in fuel and water, their power, endurance and ease of control quickly win the approval of experienced oil and gas men, and Franklin's low maintenance cost and adaptability to any fuel conditions will still further add to your satisfaction as a user.

*May we send you one on trial?*

**Price for Mid-Continent and Western Service**
**$3700.00 F. O. B. Franklin.**

**Distributed by**

ATLAS SUPPLY CO.
Muskogee, Okla., and Branches

NEW MARTINSVILLE SUPPLY CO.
New Martinsville, W. Va.

INTERNATIONAL SUPPLY CO.
Tulsa, Okla.. and Branches

WOOSTER TOOL & SUPPLY CO.
Wooster, Ohio

W. HUNTER ATHA
Zanesville, Ohio

WASHINGTON ENGINE & PUMP CO.
Washington, Penna.

BRADFORD SALES CO.
Bradford, Penna.

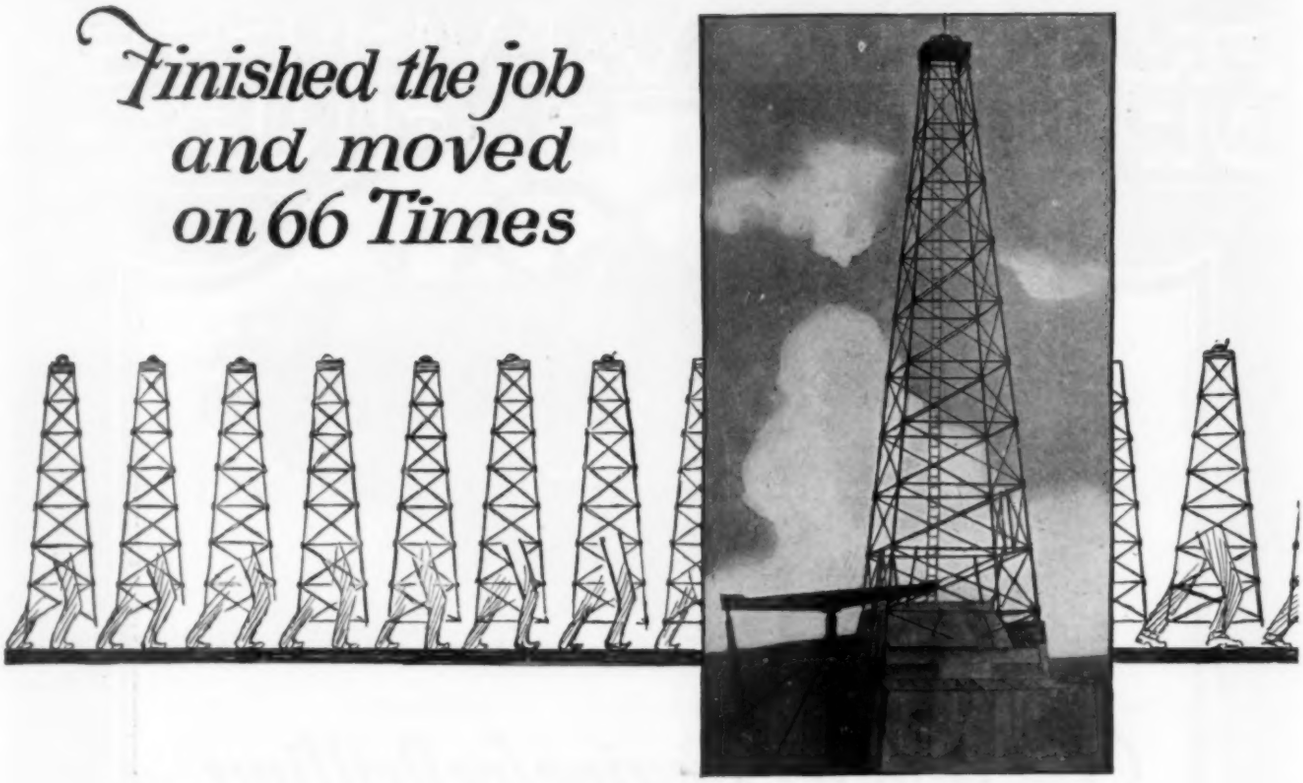
McEWEN BROTHERS
Bolivar, N. Y.

*46 Years of Exclusive, Continuous Oil Field Service*

# FRANKLIN VALVELESS ENGINE COMPANY

Established 1879

# Finished the job and moved on 66 Times



AT a total cost of $25 for repairs—a few bolts had to be replaced now and then—a Moore Derrick was kept in operation more than a dozen years and, when last heard from, was still going strong, with 66 completed wells to its credit.

It was estimated that the cost of wood derricks if they had been used to accomplish the same work, would have been at least $25,000. It is doubtful if any other than a Moore Derrick, of whatever material, has ever established such a record.

With a Moore Derrick, however, such performance is quite in character. The first Moore Derrick ever erected, eighteen years ago, is still in use at Mannington, W. Va. Long life and easy portability are built into every Moore Derrick and assured by known engineering facts as to design and material.

**LEE C. MOORE & CO., Inc.**
**Oliver Building :: Pittsburgh, Pa.**

CASPER, WYO.
Midwest Building

DALLAS, TEXAS
Magnolia Building

SHREVEPORT, LA.
414 Merchants Building

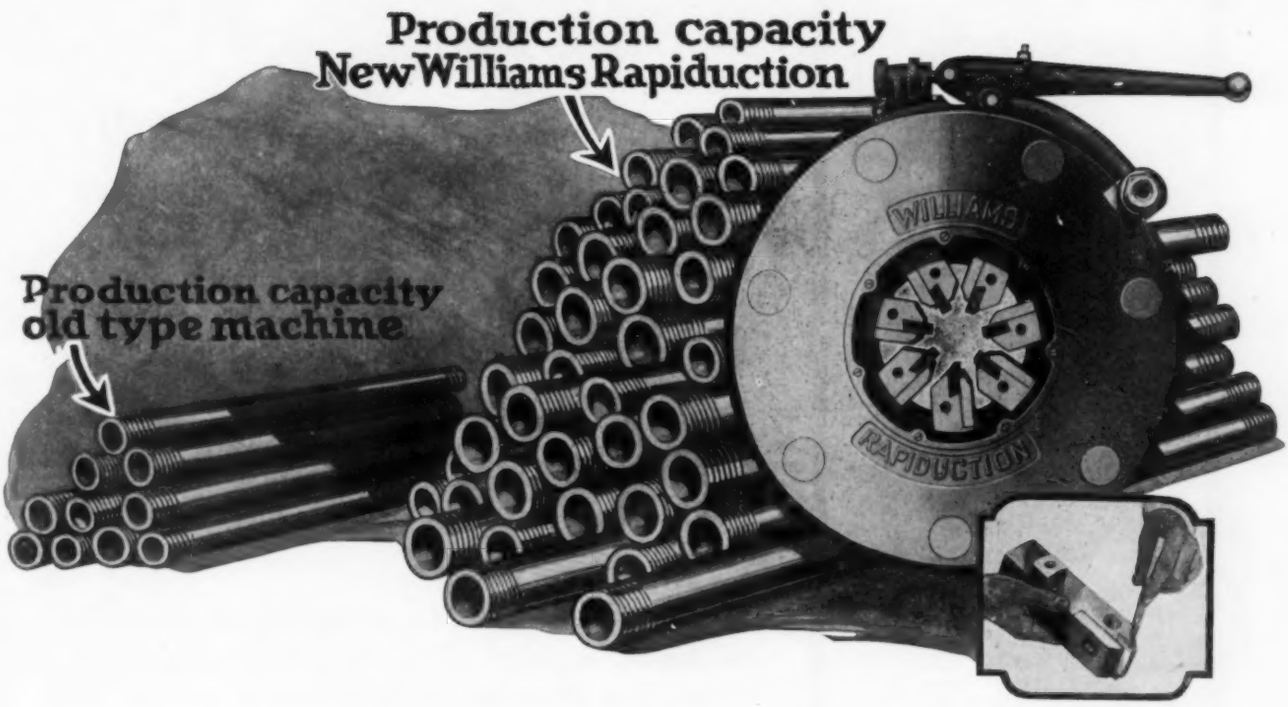
TULSA, OKLA.
Atlas Life Building

PARKERSBURG, W. VA.
Union Trust Building

## *Success!*

*Because of the success that users have enjoyed, Moore Derricks now in use far outnumber all other steel derricks combined. And wood derricks are fast becoming obsolete. Ask for literature.*

**MOORE TUBULAR STEEL DERRICKS**




# Production ability *unequaled in the history of pipe threading*

PRACTICAL plant men have expressed genuine amazement at the remarkable speed records set up by the new Williams Rapiduction Pipe Threader in performance on actual pipe threading jobs.

For here's a machine that shatters all previous conceptions of pipe threading production ability—that for high speed production ability outstrips its old type rivals four to one.

The new Williams Rapiduction Threader has definitely proved its ability under stop watch checking:

1 To thread and cut off three 6" threads in 3 minutes and 5 seconds, compared with 13 minutes on old type machine.

2 Production time savings in changing dies are equally striking: 10 seconds to change single chaser bit in the new Rapiduction machine, compared with 220 seconds required to replace complete set in old type machine.

3 Die costs cut from $120.00 to $14.00 for 2½" to 6" range.

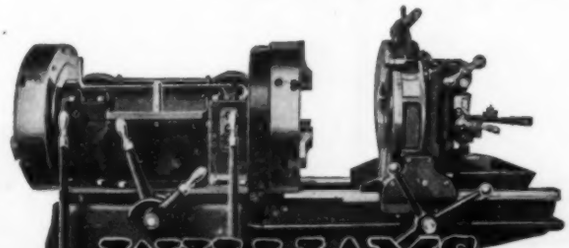
For specific information on the production ability of the new Williams Rapiduction Threader together with comparative time studies, drop a line in the mail today.

WILLIAMS TOOL CORPORATION, ERIE, PA.
*Canadian Plant—Brantfort, Ontario*

*The Williams line includes pipethreading machines covering the entire range of pipe threading — from ¼" to 24".*

## *List of Dealers who Handle Williams Tool Line Exclusively*

Manning, Maxwell & Moore, Inc. New York, N. Y., Pittsburgh, Philadelphia, Boston, Birmingham, Buffalo
Harron, Rickard & McCone Co. San Francisco, Cal.
Harron, Rickard & McCone Co. Los Angeles, Cal.
Peden Iron & Steel Co. Houston, Texas
Huey & Phillips Dallas, Texas
Oliver H. Van Horn Co. New Orleans, La.
E. A. Kinsey Co. Cincinnati, Ohio
Jos. T. Ryerson & Son Chicago, Ill.
Oil Well Supply Co. Pittsburgh, Pa.
Portland Machinery Co. Portland, Ore.
Seattle Hardware Co. Seattle, Wash.
Chas. A. Strelinger Co. Detroit, Mich.
English Bros. Machinery Co. Kansas City, Mo.



WILLIAMS
RAPIDUCTION
POWER PIPE MACHINE

*There is a type of Darling Gate Valve to meet every condition in oil field, pipe line and refinery service. The Valve shown above is our No. 101 Extra Heavy Gate Valve, tested 1000 lbs. Water Pressure and recommended for working pressures not exceeding 500 lbs. oil or gas.*

# *Select Your Valves Carefully Before You Start Operations*

ONE defective valve may tie up production for hours whether it be in the field, a main line or in refinery service. It means more than the cost of repairs or a new valve—it means idleness of those dependent on the supply from that line—all overhead and no production until repairs are made.

Darling Gate Valves have given faithful service in oil fields for years. Their long wearing qualities make them attractive to the man who buys on the basis of cost per year instead of cost per valve. They're easily operated—and they stay tight.

Darling Gate Valves reduce production losses to a minimum, and they seldom need repairing or replacing. See that Darling Gate Valves are included in the next equipment you buy.

Diagrams of construction details will be mailed on request.

## DARLING VALVE & MFG. COMPANY

Williamsport, Pa.

New York Chicago Oklahoma City Houston

Mid-Continent Distributors:

Frick-Reid Supply Co. Atlas Supply Co.
International Supply Co. Petroleum Supply Co.

California Distributor:
Petroleum Equipment Company, Los Angeles

TRADE DARLING MARK

# DARLING

## GATE VALVES

# 1926
## *promises to be*
# THE BEST BUSINESS YEAR
## *since 1920*

1925 marked a steady improvement in business conditions throughout the Oil Industry, which was reflected in a very gratifying way in the growth of the Continental Supply Company.

Our record in the matters of expert service and sound selection of equipment has been bringing our company more and more into the field of big contract handling, among other developments. We have noted a substantial increase in the past year in number of contracts handled for the construction of complete pipe lines, erection and equipment of complete gasoline plants, etc.

The year has also marked important additions to the roster of Continental equipment, notable among these being American Wire Lines, D & B Sucker and Pull Rods, and Jaques Spiral Drilling Connections. We have also noted with pleasure the growth in popularity and importance of a number of older Continental items, a striking instance of this being offered by the Tico Gas Engine, now undoubtedly (and deservedly) the most popular gas engine in use in the Oil Fields.

Every indication points to continued improvement of conditions throughout 1926. We confidently look forward to the best business year since 1920, in every department of the Industry. May we not have the pleasure of serving you during this year of wonderful prospects?

*"If CONTINENTAL Sells It There Is No Better"*

## THE CONTINENTAL SUPPLY CO.

**General Offices: ST. LOUIS**

Export Office: 2 Rector St., New York
London Office: 316-317 Dashwood House, Old Broad Street, London E. C. 2, England

MORE THAN 70 STORES IN THE OIL COUNTRY

# CONTINENTAL

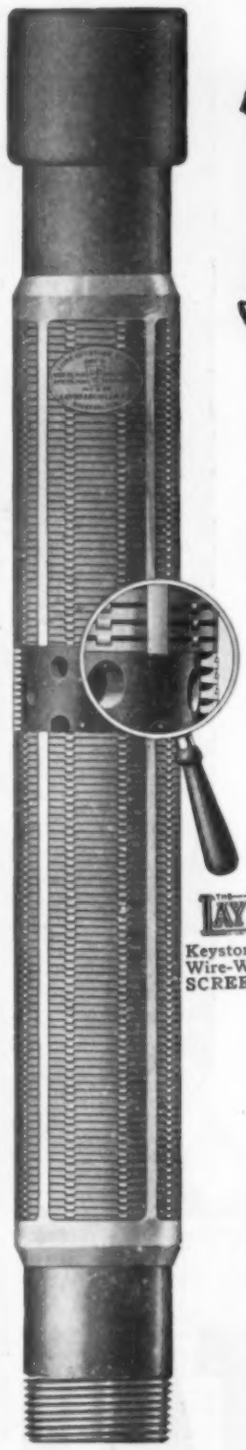
# Do You Realize—?

*That during the Year 1925 there was more of*

THE LAYNE Keystone Wire-Wrapped

**SCREEN Used**

in the Oil Fields of the World than of All Other Wire-Wrapped Screen Combined



THE LAYNE Keystone Wire-Wrapped SCREEN

*This leadership is also enjoyed by*

THE LAYNE PACKERS

*Write for Screen and Packer Literature*

THE LAYNE-NEW YORK CO.
30 Church St., New York

THE LAYNE & BOWLER CORP.
Los Angeles, Calif.

VICKERS, LIMITED
Broadway, Westminster, S. W. I.
London, England

**The Layne & Bowler Co.**
**HOUSTON, TEXAS**

Manufacturers of Screens, Packers, Setting Tools, Swivels, Set Shoes, Nipples, Back Pressure Valves, High Pressure Grease Guns, Etc.

# SHIFTING FORMATIONS

unavoidable in the desert; inexcusable in an oil field—

HALLIBURTON Cementing prevents shifting formations.

*Write for Booklet*

HALLIBURTON
OIL WELL CEMENTING CO.
DUNCAN · OKLAHOMA

*Say you saw it in The OIL WEEKLY*

# *Wherever oil is found*

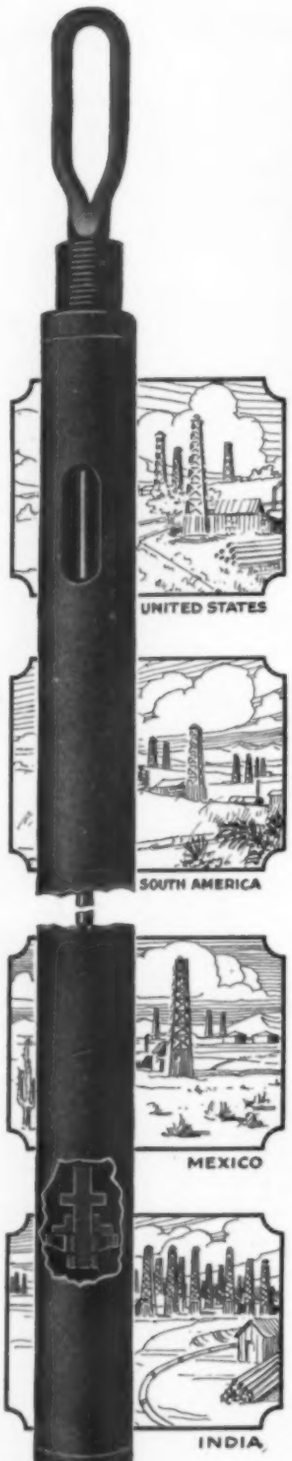
*you will also find the*

# LARKIN

PATENTED

# IMPROVED SAND PUMP

*giving dependable service*




Its popularity has spread rapidly since it was first introduced in Eastern fields. The one reason for its present wide distribution in service is *good results.*

This famous pump is designed to meet all conditions, and does, with an unusual degree of satisfaction. In every way it is representative of *The Larkin Line* and reflects the way in which all our Drilling and Fishing Tools have fulfilled the needs of the Industry.

Today *The Larkin Line* is more complete than ever, but it still has its basis in the one characteristic we have always held fundamental—*thorough reliability in the performance of the duty for which intended.*

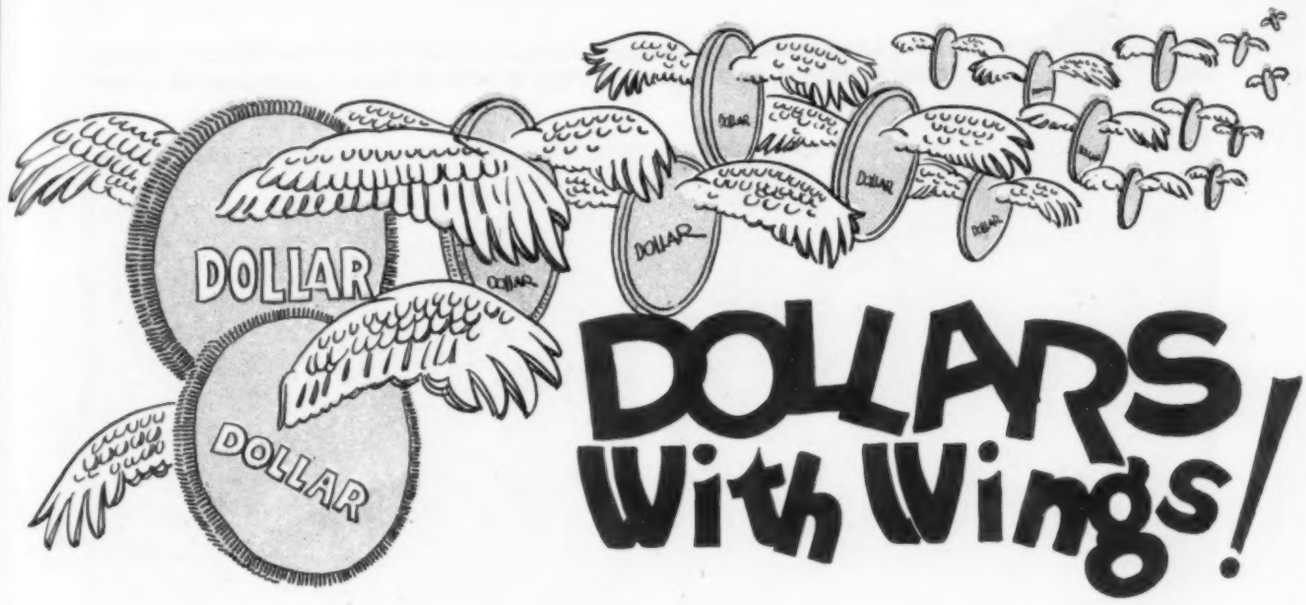
If this is what you want, get *Larkin Products* from any of the leading supply stores.

*Our new catalogue No. 30 describes The Larkin Line.*

*May we send you a copy?*

# LARKIN & CO.

BUTLER, PA., U. S. A.




# DOLLARS With Wings!

The vapor floating over the tops of your old style lease tanks is dollars—with wings.

It's the difference between the gravity of your crude at the C. H. and in the P. L.

Emvee tanks are welded in one piece from heavy, rust-resisting, copper alloy steel and are GUARANTEED to be POSITIVELY GAS TIGHT. Your crude is delivered into the line at its highest gravity—and price.

With an Emvee Sight Flow Separator and a battery of Emvee Tanks you capture every dollar your wells produce—there'll be no "dollars with wings" on YOUR lease.

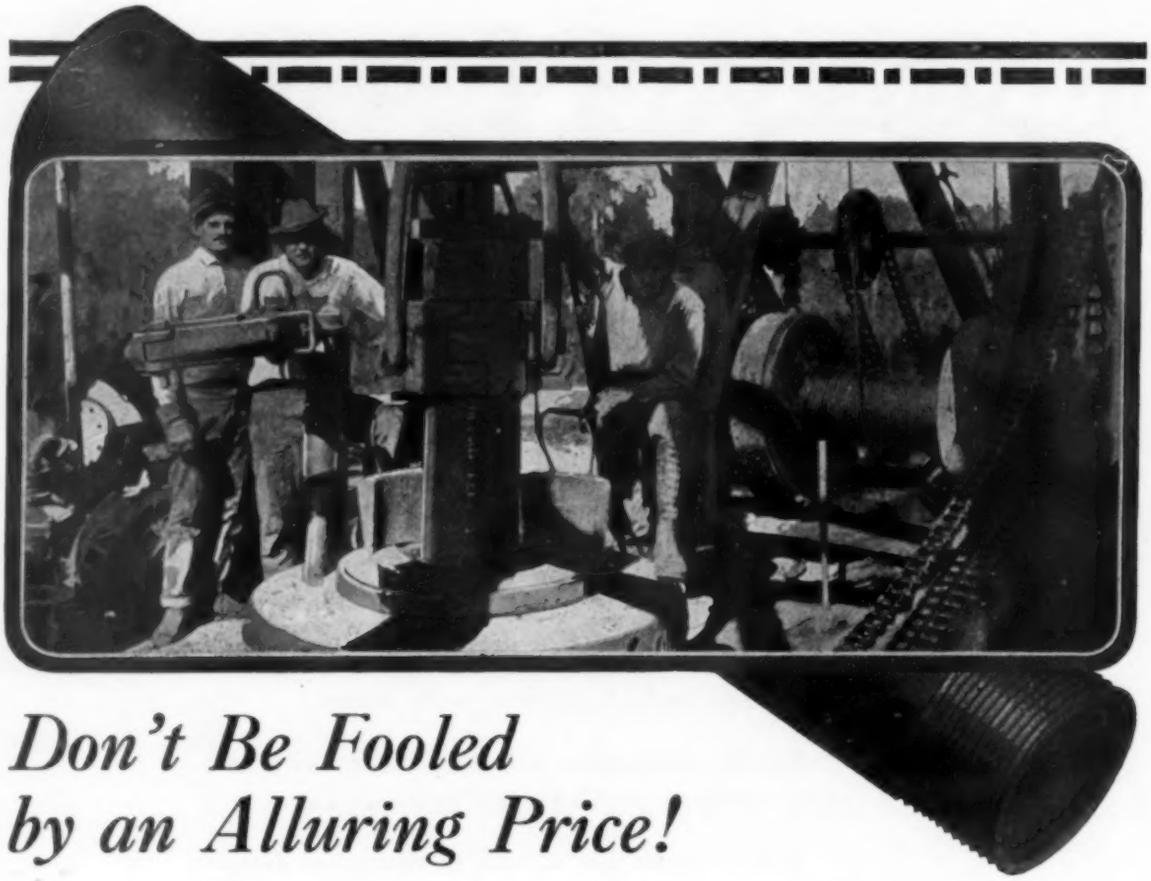
*Write for illustrated literature*

## M & V Tank Company

**Conservation Tankage**

**Wichita Falls, Texas**

Branches at Vernon, Olney, Cross Plains and Nocona, Texas



# *Don't Be Fooled by an Alluring Price!*

"You get what you pay for" is a saying as old as the hills. Bear it in mind when buying pipe. Nearly always when low-price is the chief selling argument "things are not what they seem."

Cost per year—not price per length—is the buying basis that spells true pipe economy. Only after the test of time can you honestly say that a pipe costs little or much.

In oil fields everywhere men are STILL PAYING for pipe which was bought at the time that the wells were drilled. Paying for its inability to resist crystallization and corrosion—paying for unsound welds—and time consuming difficulties in cutting and rethreading.

The greater manufacturing cost of wrought iron pipe is reflected in the slightly higher purchase price—yet the life of Reading Genuine Wrought Iron Pipe is two to three times that of steel. Its structure is fibrous, while that of steel is crystalline. The non-corrodible slag content protects it, and a superior threading quality insures tighter joints.

Make it a point to look for "Reading" on the next pipe you order.

**READING IRON COMPANY**

**READING, PA.**

*World's Largest Manufacturers of Genuine Wrought Iron Pipe*

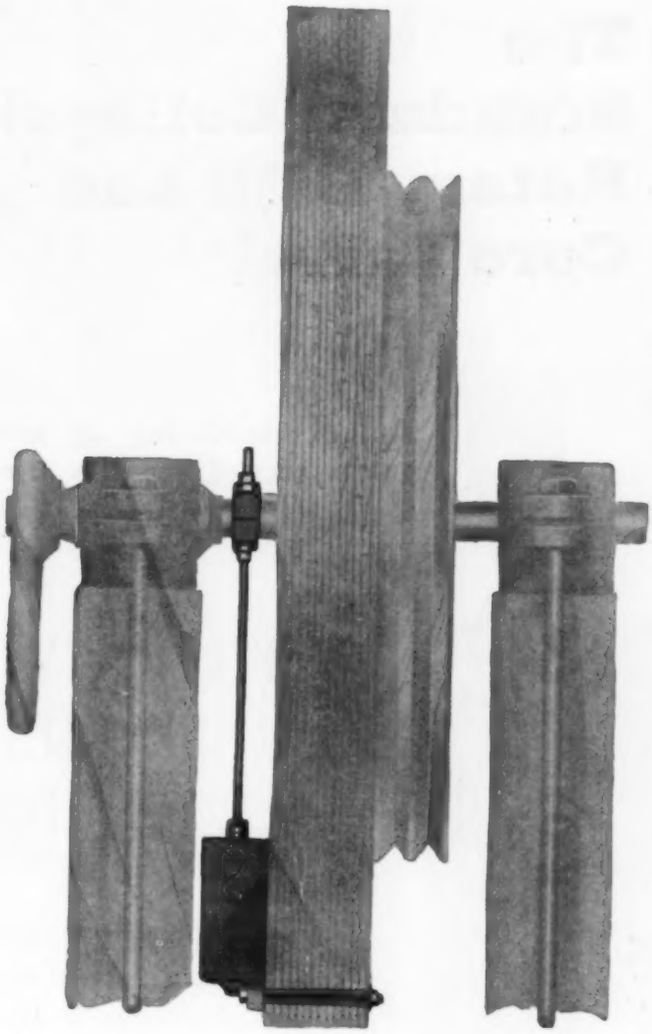
OIL WELL SUPPLY COMPANY, Distributors
Inquire at any of their 100 branches

**READING PIPE**

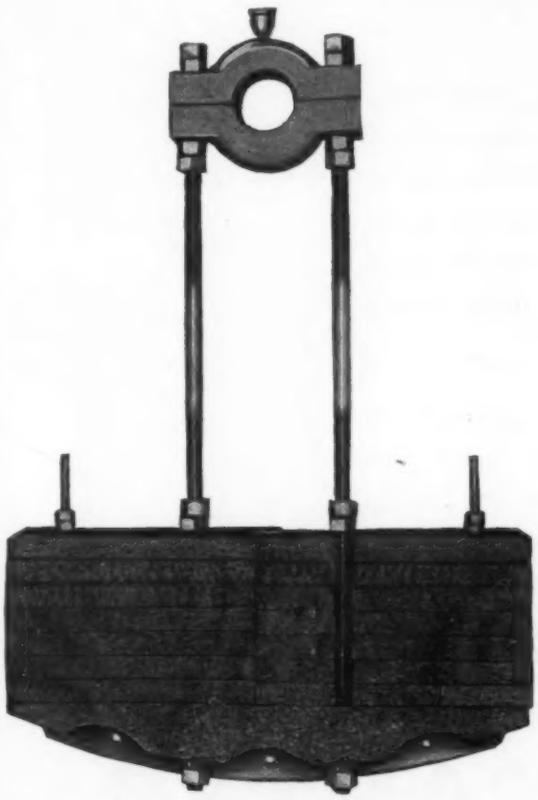
**GENUINE WROUGHT IRON**

# Don't Counterbalance

# Equalize



The O. C. S. Equalizer is a Band-wheel Counterbalance and it **Equalizes** the load on the belt and Equalizes the speed up and down of the rods.



Patent Pending

*Think This Over*

CALL YOUR SUPPLY STORE OR ASK US FOR FULL DETAILS HOW IT INCREASES PRODUCTION AND LOWERS POWER COST

Manufactured by

THE OIL COUNTRY SPECIALTIES MFG. CO.

Coffeyville, Kans.

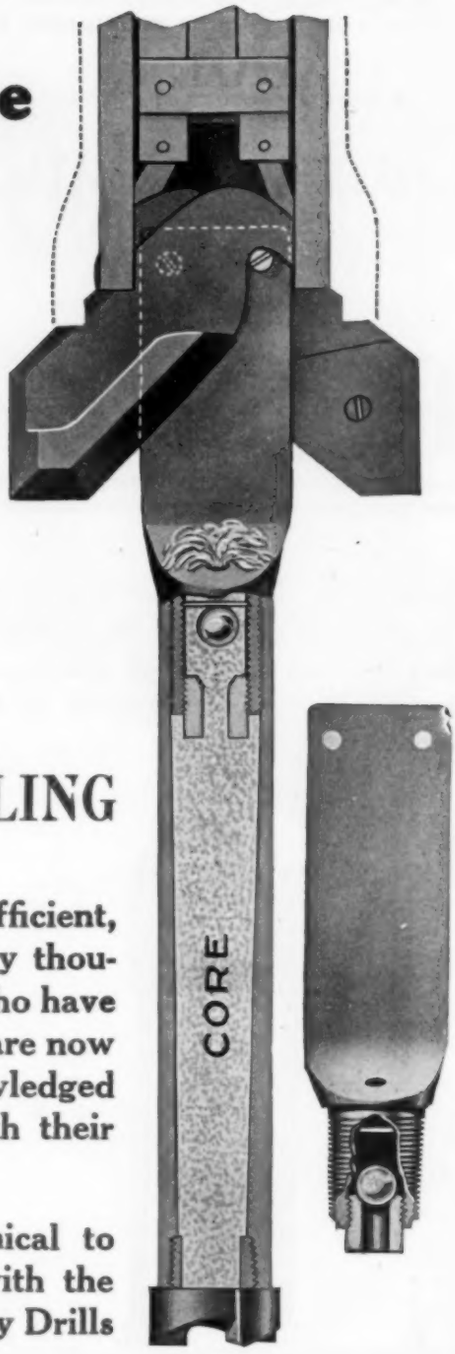
Hillman-Cooney, Inc., Los Angeles, Cal., California Agents

*Say you saw it in The OIL WEEKLY*

# The Standard Collapsible Rotary Drill and Core Barrel

have established an enviable record on the three following points:

## EFFICIENCY
## RELIABILITY
## RAPID DRILLING




They have proved so efficient, reliable and saved so many thousands of dollars to those who have used them that our claims are now fully and cheerfully acknowledged by every one familiar with their performance.

Wouldn't it be economical to equip your drilling rigs with the Standard Collapsible Rotary Drills and Core Barrels?

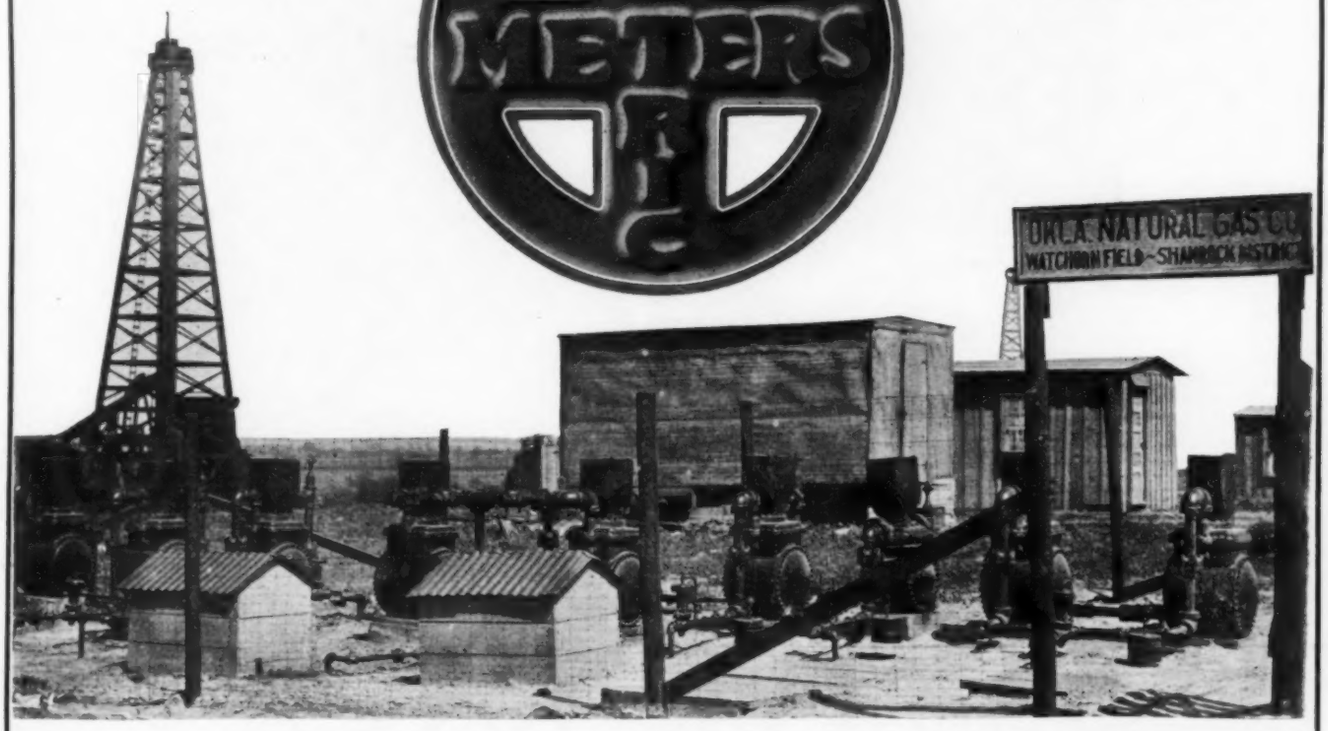
*Write For Descriptive Literature*

# O. M. CARTER

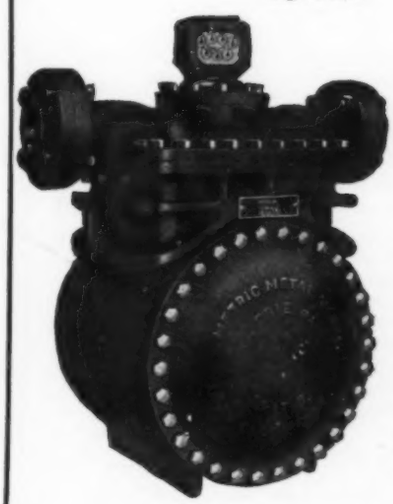
**W. T. HILTPOLD, Sales Agent**
**206-7-8 Scanlan Bldg., HOUSTON, TEXAS**

# *Tireless* IRON

# *Accuracy* CASE




**30-B**
A special for gas measurement on drilling and pumping wells



Should your desire be to have a gas meter that registers the flow with not only uncanny accuracy but gives correct service for an extraordinary long time without attention or complicated adjustments, install a Metric Iron Case Drilling Meter on the next well you start, or place on the pump.

*These two Metric Iron Case Drilling Well meters are designated 30-B and 60-B. They and other types of Iron Case meters are fully described in Bulletin 118. We have your copy ready to mail.*

**60-B**
Same high pressure meter as shown on left fitted with Recording Gauge

General Offices and Plant—Erie, Pennsylvania, U. S. A.

**METRIC METAL WORKS**
OF THE AMERICAN METER COMPANY INC.

# INDEX TO ADVERTISERS


### A

Acme Fishing Tool Company ..... *
Adler, Joseph L. ..... 78
Ajax Iron Works ..... *
Allen and Courtney ..... *
Aluminum Company of America ..... *
American Cable Company ..... *
American Pipe Bending Machine Company *
American Telephone & Telegraph Company *
American Well Works ..... *
Andrews Steel Company ..... 49
Axelson Machine Company ..... *

### B

Baash-Ross Tool Company ..... 71
Baird Supply Company ..... *
Baker Casing Shoe Company ..... 70
Barnickel, Wm. S., Company ..... 82
Becker Specialty Company ..... *
Bessemer Gas Engine Company ..... *
Black, Sivalls & Bryson, Inc. ..... *
Braden Company ..... *
Bridgeport Machine Company ....Front cover
Brown Welding & Machine Company ..... *
Brownell Company ..... 56
Buckeye Traction Ditcher Company ..... *
Burns Tool Company ..... *
Butler Manufacturing Company ..... *
Byron Jackson Pump Company ..... *

### C

Cameron Iron Works ..... *
Carter, O. M. ..... 18
Central Steel Company ..... *
Central Tube Company ..... 75
Clark Bros. ..... *
Clark Machine Company ..... *
Climax Engineering Company ..... 73
Coatesville Boiler Works ..... *
Columbus Sucker Rod Company, The ..... *
Continental Supply Company ..... 11
Cornell & Company ..... 78
Crain Ready-Cut House Company ..... *
Cunningham Company ..... *

### D

D & B Pump & Supply Company ..... 76
Darling Valve Manufacturing Company ..... 10
De La Vergne Machine Company ..... *
Dunn Manufacturing Company ..... 61

### E

Eagle Picher Lead Company ..... *
Eastern Texas Electric Company ..... *
Eastern Torpedo of Ohio Company ..... 72
Eclipse Paint & Mfg. Company ..... *
Elliott Core Drilling Company ..... 71
Emsco Derrick & Equipment Company ..... 37

### F

Federal Supply Company ..... *
Fetty, C. C., & Company ..... *
Fort Worth Laboratories ..... 78
Franklin Valveless Engine Company ..... 7
Frick-Reid Supply Company ..... 63

### G

Gardner Governor Company ..... 74
Gaso Pump & Burner Mfg. Company ..... 3
General Electric Company ..... *
Gott, H. P., Manufacturing Company ..... 70
Goulds Manufacturing Company ..... *
Greenspon's Sons Iron & Steel Company ..... 58
Guiberson Corporation ..... 57
Gulf Refining Company ..... 4

### H

Halliburton Oil Well Cementing Company..13
Hardway & Cathey ..... 78
Harrisburg Pipe & Pipe Bending Co. .....
..... Inside back cover
Hercules Supply Company ..... *

### H—Continued

Heydrick Mapping Company ..... 78
Hirsch & Hannay ..... 78
Hope Engineering & Supply Company ..... 69
Hopkins, Edwin B. ..... 78
Hough Manufacturing Co., Charles N..... 68
Houston Engineers ..... 66
Hughes Tool Company .....Back cover
Humble Oil and Refining Company ..... *

### I

International Derrick & Equipment Co. ....67
International Supply Company ..... *

### J

Jarecki Manufacturing Company ..... *
Jefferson Union Company ..... *
Jensen Bros. Manufacturing Company ..... *
Jones Company, The S. M. ..... 70
Jones-McLaughlin, Inc. ..... *
Johns-Manville, Inc. ..... *

### K

Kansas City Hay Press Company ..... *
Kelly & Jones Company ..... *
Keystone Pipe & Supply Company ..... 52
Kobe, Incorporated ..... *

### L

Lancaster & Allwine ..... 78
Landis Machine Company ..... *
Larkin & Company ..... 14
Layne & Bowler ..... 12
LeBus Tool Works ..... *
Linthwaite-Thompson Company ..... *
Longhart Supply Company ..... *
Lorraine Corporation ..... 55
Lotto, F. ..... 78
Lucey Manufacturing Corporation ..... *
Ludlow Valve Manufacturing Corporation .. *
Lufkin Foundry & Machine Company ..... *
Lunkenheimer Company ..... *

### M

M & V Tank Company ..... 15
Manzell Bros. ..... *
Magnolia Petroleum Company ..... 6
Maloney Tank Manufacturing Company ....51
McEvoy, J. H., & Co. ..... *
McIntosh & Seymour Corporation ..... *
Metric Metal Works ..... 19
Mexia Planing Mill ..... *
Moore, Lee C., & Company ..... 8

### N

National Supply Companies ..... 81
National Transit Pump & Machine Co. ....22
National Tube Company ..... *
Norris Bros. ..... 50
Northrup Equipment Company ..... 54

### O

Oil City Iron Works ..... *
Oil Country Specialties Mfg. Company ....17
Oil Well Supply Company ..... 35
Okmulgee Boiler & Welding Works ..... *

### P

Patrick, R. S. ..... 48
Pattin Bros. Company ..... *
Peden Iron & Steel Company ..... 76
Pelican Well Tool & Supply Company ..... 60
Petroleum Iron Works ..... *
Petroleum Rectifying Company ..... 72
Pioneer Tank & Boiler Company ..... *
Pittsburgh Reinforced Brazing & Mach. Co. *
Price, W. Armstrong ..... 78

### R

Ratigan, J. P. ..... 73
Reading Iron Company ..... 16
Reed Air Filter Company ..... 59
Reed Roller Bit Company ..Inside front cover
Regan Forge & Engineering Company ..... *
Republic Supply Company ..... *
Ring, Dewitt T. ..... 78
Robertson-MacDonald Lumber Company .... *
Rock Island Plow Company ..... *

### S

Sargent Engineering Company ..... *
Shaffer, J. E., Company ..... *
Shaffer Specialty Company..... *
Simplex Equipment Company ..... 5
Sinclair Refining Company ..... 38
Smith & Company, Howard ..... *
Smith, H. C., Manufacturing Company ..... 53
Smith Separator Company ..... 59
South Chester Tube Company ..... *
Southern Brass Manufacturing Company ....78
Southern Engine & Pump Company ..... *
Southwestern Purchaser ..... *
Spang & Company ..... *
Spence Machine Company, The ..... *
Spengler Core Drilling Company ..... *
Steiner, Dr. George ..... 78
Stone, Jesse R. ..... 78
Sullivan Company, The ..... *
Sullivan Machinery Company ..... 68
Superior Tube Company ..... *

### T

Texas Oil Pump Company ..... *
The Texas Company ..... *
Texas Cyclone Fence Company ..... *
Titusville Forge Company ..... *
Titusville Iron Works, The ..... *
Traction Machine Company ..... *
Trumble Gas Trap Company ..... *
Tyler Tube & Pipe Company, The ..... 58

### U

United Iron Works ..... 56
United States Torpedo Company ..... *

### V

Vinson, Elkins, Sweeton & Weems ..... 78

### W

Ward Chemical Company ..... *
Waukesha Motor Company ..... 64
Webster, C. W. ..... 78
Westcott & Greis ..... *
Westcott Valve Company, Inc. ..... *
Western Machinery Company ..... *
Western Supply Company ..... *
Westinghouse Electric & Mfg. Company .... *
Wichita Falls Motor Company ..... *
Wickwire-Spencer Steel Company, Inc. ..... *
Williams & Company, J. H. ..... 56
Williams Tool Corporation ..... 9
Williamsport Wire Rope Company ..... *
Wilson Oil Tools Corporation ..... 78
Winston & Oberbeck ..... *
W-K-M Company ..... *
Wyatt Metal & Boiler Works ..... *

### Y

Yale & Towne Company ..... *
Youngstown Sheet & Tube Company ..... *

### Z

Zero Hour Torpedo Company ..... *

FEB-1'26
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*More than 25,000,000 barrels of oil are stored in earthen pits of this type in the Smackover district*

# The OIL WEEKLY

January 29, 1926 Volume 40, Number 6

## TABLE OF CONTENTS

LOS ANGELES MEETING MOST IMPORTANT IN HISTORY OF AMERICAN PETROLEUM INSTITUTE . . . . . 23
*By William V. Gross*

STANDARDIZATION PROGRAM HAS PASSED PRELIMINARY RESEARCH . . . . . 25
*By Spencer W. Robinson*

STEAM PROTECTION AGAINST FIRE IN OIL TANKS . . . . . 28
*By G. O. Wilson*

MAGNOLIA BUILDING PIPE LINE FROM ARKANSAS TO COAST . . . . . 33

BOLING ONLY NEW COASTAL FIELD DUE FOR DRILLING BOOM . . . . . 34

REGISTRATIONS AT LOS ANGELES . . . . . 34-a

THEORY AND PRACTICE OF HIGH SPEED ROTARY DRILLING . . . . . 42
*By Harry Pennington*

CRUDE PRICES . . . . . 39

U. S. PRODUCTION . . . . . 44

U. S. COMPLETIONS . . . . . 45

WILDCATS FROM ALL SECTIONS . . . . . 48

PERMITS FOR NEW WELLS . . . . . 54

NEW EQUIPMENT . . . . . 65

PAUL PEEBLES . . . . . 75

SQUEAKS FROM THE BULL WHEEL . . . . . 77

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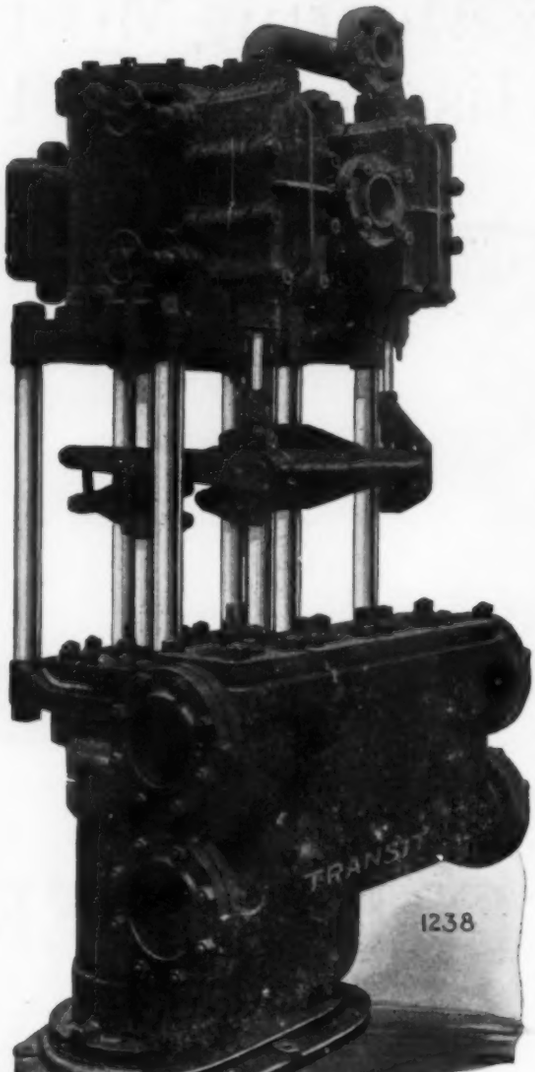
TRANSIT PUMPS




# Vertical Duplexes

Vertical pumps are always desirable where the floor space is limited. The fluid valves are so arranged that the pistons are always submerged.

The steam cylinders, fluid cylinders and stuffing boxes are relieved of the weight of the reciprocating parts, thus materially lengthening the life of these parts.

Many prudent pipe line and refinery men prefer these vertical duplex pumps on account of these, and other advantages.

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## NATIONAL TRANSIT
### Pump & Machine Company
### OIL CITY, PA.

DISTRICT OFFICES: New York, Philadelphia, Pittsburgh, Cleveland, Tulsa, Houston, Denver

*Say you saw it in The OIL WEEKLY*

# Los Angeles Meeting Most Important In History of A. P. I.

## Technical discussions offer valuable suggestions for benefit of industry

*By Wm. V. Gross*
*Staff Representative*

Los Angeles, Calif.—From the point of results obtained, attendance, technical developments and interest displayed by members, the Sixth Annual meeting of the American Petroleum Institute, brought to a close at Los Angeles January 22, was the most important in the history of the organization.

All sessions, general and committee, were well attended by men who not only displayed a keen interest in discussion of reports but did not hesitate, when called upon, to let others in the gatherings benefit from their personal views and experiences. The manifestation of such a spirit of progressive contribution of ideas in the conclaves brought out concrete results in the form of decisions, in specific instances, to standardize certain oil field equipment.

Technical discussions in the general sessions by recognized authorities offered many valuable suggestions.

The frankness apparent in the discussions not only facilitated decision of immediate subjects, but comprehended a mass of data collected by producers and manufacturers during the past four years, largely at their own expense, which should prove invaluable in future steps of the institute towards standardization. This data, given mostly in the form of papers submitted or oral discussion, is in possession of the institute verbatim, and will be common property of all members of that body as soon as complete reports of the convention proceedings are published.

### Farish Elected President

At a meeting of the board of directors, held Thursday, W. S. Farish, president of the Humble Oil and Refining Company, Houston, was elected president of the institute for the ensuing year. Mr. Farish, who began his career as an oil man at Spindletop, more than 20 years ago, came to Texas after graduating from the state university in Mississippi, his home state.

Early in his career, Mr. Farish was associated with R. L. Blaffer, treasurer of the Humble, operating in South Texas. In 1916 properties of Blaffer and Farish, together with a number of other independents, were merged with the Humble, Mr. Farish assuming the vice-presidency of that organization. Following a remarkable growth of the Humble Oil and Refining Company, Mr. Farish was largely responsible for enlisting the financial aid of officials of the Standard Oil Company of New Jersey, in order that the company's development program might be realized. At that time, half interest in the company was sold to officials of the Standard, which now controls the Humble.

Mr. Farish's experience as a leading executive among oil company associations is wide as he has been a promi-

**ELECTED PRESIDENT**

W. S. FARISH

nent progressive in the oil industry for a number of years and knows the ups and downs of the small independent as well as those of the majors. He was president of the Gulf Coast Independent Oil Producers' Association for several years, and during the war he served on the Petroleum War Service board. Since Mr. Farish accepted one of the first directorships in the American Petroleum Institute, he has been one of the moving spirits behind its organization.

### Other Officers

Other officers elected to serve the Institute during the coming year were: E. W. Clark, Union Oil Company, Los Angeles; W. N. Davis, Mid-Continent Oil and Gas Association, Bartlesville; R. D. Benson, Tidewater Oil Company, New York—all vice-presidents; Amos L. Beaty, The Texas Company, New York, treasurer; R. L. Welch, New York, secretary and counsel; W. R. Boyd, Jr., New York, assistant secretary and counsel; Lacey Walker, New York, assistant treasurer.

In addition to the three vice-presidents, treasurer and retiring president, who are members ex-officio, the following compose the executive committee: Walter C. Teagle, Standard Oil Company of New Jersey, New York; E. C. Lufkin, The Texas Company, New York; George S. Davidson, Gulf Oil Corporation, Pittsburgh; Henry L. Doherty, Henry L. Doherty and Company, New York; R. W. Stewart, Standard Oil Company (Indiana), Chicago; E. W. Marland, Marland Oil Company, Ponca City.

Those appointed to serve on the membership committee for the ensuing year were J. F. Lucey, Lucey Corporation, Dallas; F. B. Henderson, Associated Oil Company, San Francisco; J. W. Van Dyke, Atlantic Refining Company, Philadelphia; J. C. Donnell, Ohio Oil Company, Findlay, and J. D. Collett, O'Keefe and Collett, Fort Worth.

With the idea of serving six geographical divisions related to the industry in matters of production, manufacturing, distribution, transportation, natural gas, natural gasoline and foreign trade, the following directors were elected by the board of councillors to serve in the capacities designated:

### District Directors

Mark L. Requa of San Francisco, Pacific Coast production group; B. B. Brooks, Consolidated Royalty Oil Company, Casper, Wyoming, Rocky Mountain production group; J. D. Collett, O'Keefe and Collett, Fort Worth; W. C. Franklin, Tidal Oil Company, Tulsa; J. Edgar Pew, Sun Oil Company, Dallas, and Frank Phillips, Phillips Petroleum Company, Bartlesville;—all in the Central United States production group; J. C. Donnell, Ohio Oil Company, Findlay, Eastern United States production group; E. W. Clark, Union Oil Company, Los Angeles, Pacific Coast manufacturing group; T. A. Dines, Midwest Refining Company, Denver, Rocky Mountain manufacturing group; W. A. Pielsticker, Skelly Oil Company, El Dorado, and P. M. Mis-

kell, Empire Refineries, Incorporated, Tulsa, Central United States manufacturing group; Charles L. Suhr, Pennzoil Oil Company, Oil City, Eastern United States manufacturing group; E. T. Wilson, Continental Oil Company, Denver, Rocky Mountain distribution group; H. B. Earhart, White Star Refining Company, Detroit, Central United States distribution group; A. P. Coombs, Standard Oil Company of Ohio, Cleveland, Eastern United States distribution group; H. E. Felton, Union Tank Car Company, New York, transportation group; A. B. Macbeth, Midway Gas Company, Los Angeles, natural gas group; D. E. Buchanan, Chestnut and Smith Corporation, Tulsa, natural gasoline group; Herbert L. Pratt, Standard Oil Company of New York, New York, Far East foreign trade group; E. L. Doheny, Pan American Petroleum Company, New York, Mexico and South America trade group.

To serve on the "At Large" committee, the board of councillors elected the following: J. F. Lucey; George H. Jones, Standard Oil Company of New Jersey, New York; E. C. Lufkin; Thomas A. O'Donnell, California Petroleum Corporation, Los Angeles; W. N. Davis; E. B. Reeser, Barnsdall Corporation, New York; H. F. Sinclair, Sinclair Consolidated Oil Corporation New York; George S. Davidson; J. W. Van Dyke; Henry L. Doherty; Wallace E. Pratt, Humble Oil and Refining Company, Houston, Texas.

### Hughes Retained

One of the most outstanding accomplishments of the Institute's present administration was securing the services of the Honorable Charles Evans Hughes to represent it in matters before the Federal Oil Conservation Board. In a letter from the former secretary of state to Mr. Pew, retiring president of the Institute, the status of Mr. Hughes' connection with the Insttitue is seen:

"I have considered the proposal, which you made in our recent interview, that I should represent the American Petroleum Institute in connection with the matters before the Federal Oil Conservation Board constituted by the President in December, 1924. It will give me pleasure to undertake this representation with the understanding that it is desired that there shall be a cordial and thoroughgoing cooperation with the Federal Oil Conservation Board in order to aid the development of the facts and the appropriate examination of the problems of the industry in the light of both private and public interest. It seems to me that such an impartial inquiry, conducted by men so eminently competent and disinterested as are the members of the Federal Oil Conservation Board, should be welcomed so that all the exigencies of the industry and all practicable methods of promoting the economical production and use of oil may be carefully considered.

"I suggest that, if the Board of Directors of the Institute approves this course, representatives of the Institute should be designated who will be able to furnish the necessary assistance and who will be available for such consultations as may be needed from time to time. * * *"

### Research Foundation

An illustration of the growing influence of the Institute as well as an evidence of increasing faith in the body on the part of oil companies is the $250,000 donation for research work made January 12 by the Universal Oil Products Company of Chicago. A letter from this company to officers and directors of the A. P. I. states that "For the purpose of furthering and enlarging the plans and work to be done in scientific research in petroleum, initiated by Mr. Rockefeller"—the Universal will contribute $50,000 per year for five years, to be devoted to research expense. This company further asserted that the contribution was made without imposing any restrictions or conditions, other than that the fund shall be used by the American Petroleum Institute, for scientific purposes.

The Universal Products Company, of Chicago, was organized 12 years ago, with J. Ogden Armour as a leading spirit. The company is a technical and scientific organization, with extensive research laboratories in Chicago, and is exclusively engaged in technical and scientific activities connected with the petroleum industry. Its work is the development of refining processes, especially for the increased production of gasoline from crude oil by cracking.

The committee appointed by the board of directors to work out a program of scientific research made possible by the fund includes Walter C. Teagle, H. L. Doherty, Amos L. Beaty, K. R. Kingsbury, president of the Standard Oil Company of California; J. C. Donnell, J. Edgar Pew, and E. W. Marland.

Members of the A. P. I. visiting Los Angeles during the convention were lavish in their praises of the city's hospitality. Social entertainment was provided for the men when they were not in conference, and ample provision was made so that the time would not hang dull on the ladies' hands while the men were busy.

Outside of the usual entertainment of golf tournaments, receptions, banquets, theatre parties and trips to the Hollywood studios and points of interest in Los Angeles, the entertainment committee Friday fostered two tours: one to the Los Angeles Basin oil fields and the other to the natural gasoline plants in the Basin. These trips, which embraced roughly a hundred miles each, were made in motor stages which were escorted on highway and through traffic by a squadron of motorcycle officers. About 200 people took the stage trip through Dominguez, Inglewood, Long Beach, Torrance, El Segundo, Murphy-Coyote, Whittier, Santa Fe Springs and Montebello oil fields, while a larger crowd went on the tour of the gasoline plants.

The next meeting of the American Petroleum Institute will be held in Tulsa, Oklahoma, according to a decision of the executive committee reached late in the week. As yet, a definite date for the meeting has not been set.

Arthur Knapp on right, with the U G I, Philadelphia. Arthur is one of the king bee statisticians of the oil industry and his charts on production, consumption, storage, etc and their relation, have been features of the Oil Weekly's annual Statistical Numbers for the past several years. Arthur some time ago was favorably mentioned for assistant fire chief, or was elected, or something like that, of the city of Woodbury Heights, just outside Philadephia. But now Arthur is sporting a new title—he is chief of police, and we suspect, the hul' derned "force" of Woodbury Heights. Arthur says that the bootleggers there are causing him no trouble. Arthur allus was a good fellow to get along with.. With him are F. C. Smith (center) of Los Angeles and Dave Donoghue, Fort Worth

A. P. I. Committee and group of interested spectators who watched a practical demonstration of making up and breaking down the "Acme" and "V" type threads in tool joints with a view of standardizing on a thread. The picture, taken in the Richfield field during the recent Convention, includes the following:. Bottom Row—reading left to right:. R. E. Allison, E. J. Miley Oil Company; R. M. Putnam, Union Oil Company; R. A. Wilson; C. R. Weiss; H. M. Harris; E. E. Greve; J. H. Hudson, Oklahoma drilling contractor; F. F. Hill, Union Oil Company; A. H. Brown, Oil Well Supply Company; H. C. Yarbrough, Union Oil Company; F. E. Bernsen, Lucey Manufacturing Corporation. Tulsa; R. L. Dudley, publisher The Oil Weekly, Houston Middle Row—W. L. (Bert) Childs, Reed Roller Bit Company, Houston; H. G. Texter.. Top Row—W. S. Evans, Lucey Manufacturing Corporation of Tennessee, New York; Edward Timbs, Union Tool Company, Torrance; H. W. Williams, National Supply Company, Carnegie; C. H. Edmondson, Los Angeles; R. G. Brown, driller; Cyrus Stull, derricks; Eddie Crawford, cat-head man; G. S. Hanmore and H. L. Byrd, members of the crew.

# Standardization Program Passes Preliminary Research

## Field men take interested part in four day session that passes equipment to actual field tests

*By Spencer W. Robinson*
*Editor of The Oil Weekly*

Los Angeles, California.—Work on the movement toward standardization of field equipment here last week became purely a problem of operating technique. Having passed from its stage of preliminary research the movement has reached a point of progress where its influence must be calculated in future field development.

Fieild men are deeply concerned with the type and class of materials going into operating equipment and were prominent in their activity at the four day session starting January 18. Reports from the various sub-committees were largely founded upon experiments conducted in the field during the past few months and clearly show the extent to which the operating division is co-operating with leaders in the movement. All group meetings held both before and during the annual meeting of the American Petroleum Institute were well attended and discussions were participated in freely by operators, manufacturers and executives alike.

At the close of the session it was unanimously agreed that unfinished business would be resumed at a semi-annual meeting to be held at Colorado Springs, Colorado, June 14, 15 and 16. Committees immediately outlined plans of activity looking toward this meeting.

In order to carry to completion a large amount of research and experimental work necessary before several of the sub-committees can finish their recommendations, the board of directors granted an ample appropriation for this expense.

Another important step in the work was taken when a standing committee on the subject of gauging and gauging practice was appointed. The work of the Standardization Division deals largely with various types of threaded connections, which involve the use of specially made gauges. There are many problems relating both to the manufacture of gauges, tolerances, etc., and the class of fit that is desired for the work in hand.

### Committee on Gauges .

Members of this committee were taken from the various groups working on standardization and include the following:

A. B. Steen, Chief Engineer The Texas Company, Houston.

H. W. Fletcher, Chief Engineer, Hughes Tool Company, Houston.

Clarence T. Mapes, Manager 21st

works, Oil Well Supply Company, Pittsburgh.

Hollis P. Porter, engineer, Gypsy Oil Company, Tulsa.

T. D. Daviee, Assistant to the Vice-President, National Tube Company, Pittsburgh.

Paul M. Mueller, Pratt and Whitney Company, Hartford, Conn.

Dr. H. W. Bearce, Director Gage Division, Bureau of Standards, Washington, D. C.

C. C. Sharpenberg, Assistant Manager, Standard Oil Company of California, Bakersfield, Cal.

While only a few of the committees were able to submit final recommendations to the board of directors of the Institute at the meeting last week, considerable progress was recorded in all departments of the work. Those reports finished and adopted by the directors will be released at a later date and in the meantime steps are being taken to have manufacturers place equipment of these recommendations in the field.

### Belt Specifications

Tentative specifications on the following classes of belting were submitted by the Standardization Committee on Belting and adopted by the board of directors:

Leather Impregnated Stitched Cotton Fabric Belting. (Other than stitched rubber and balata belting.)

Solid Woven Hair Belting.

Solid Woven Cotton Belting.

Balata Belting.

Rubber Belting.

The tentative specifications will be issued shortly and it is hoped by the Standardization Division that this material will be accepted immediately by the field. The belting committee has outlined an extensive research program for the purpose of developing a fatigue test on belts.

No attempt has been made by the committee to specify kind or class of material that shall be used in the manufacture of various types of belts, but has attempted to set up the necessary limitations on the numerous elements necessary to produce a high grade product that will give maximum service to operators.

DICK GUIBERSON

President Guiberson Corporation, Los Angeles, as our photographer caught him during the A. P. I. Meeting.

Four sizes of locomotive type boilers have been approved as standard by the committee on boilers and the board of directors and the work on this subject has been finished. The four new standards are as follows: 30 H.P., 50 H.P., 65 H.P., 85 H.P., with two classes of working pressure—150 pounds and 175 pounds. Ten square feet of heating surface has been adopted as the basis for computing one horsepower. On workmanship and finish the committee has adopted the A. S. M. E code, in addition to certain special types of construction which have been considered especially adapted for boilers for field use.

A complete standard list of fittings has been approved for each size, as well as sizes of steam and water connections, stacks, manholes, etc.

### Tool Joints

The committee on Standardization of Cable Drilling Tool Joints which finished its work some time ago, reported much progress in the introduction of these standards to the field. The large group order which was assembled during 1925 has been practically completed by the gauge manufacturer and it is expected that by the coming summer cable tools will be available with Standard A. P. I. Joints.

Instructions for the testing of gauges used to determine the uniformity of cable tool joints has also been adopted by the board of directors. Over 40 manufacturers have been granted permission to make these joints.

In the work on the committee on the Standardization of Standard Rigs and Derricks the California district recommended a fixed water table opening for all heights of derricks with a standard taper for the legs, which would result in a different size base for the various heights of derricks. Decision on this point was postponed until results could be secured from actual experience.

Several minor amendments in the standards of pipe and casing were presented and approved as tentative. This committee has previously submitted and had adopted its recommendations at the Dallas meeting last year.

### Rotary Drill Pipe

Rotary drill pipe standards were definitely adopted. These standards had been prepared by the committee on the Standardization of Rotary Drilling Equipment and will be issued as a supplement to the A. P. I. Pipe Specifications No. 5-A. The following sizes of drill pipe are standard:

| | |
|---|---|
| 6⅝" | O.D. (Old nominal size 6") |
| 5-9/16" | O.D. (Old nominal size 5") |
| 4½" | O.D. (Old nominal size 4") |
| 3½" | O.D. (Old nominal size 3") |
| 2⅞" | O.D. (Old nominal size 2½") |
| 2⅜" | O.D. (Old nominal size 2") |

It will be noted that drill pipe will be known by its outside diameter. The couplings have been increased in di-

Getting the low-down on threads On the left—C. R. Weiss, E. E. Greve, H. G. Texter, Yarborough and H. M. Harrison. The three gentlemen on the right are J. H. Hudson, Bert Childs and F. F. Hill

D. C. Stewart, Magnolia Petroleum Company, Dallas; H. G. James, A. O. M. A. Chicago

S. A. Guiberson Los Angeles

W. K. Holmes, The Texas Company, Tulsa; T. L. Kirk, Standard Seamless Tube Company, Pittsburgh

ameter to equal the outside diameter of the tool joints.

### Tubing

Standards on tubing were also adopted subject to the ratification by some of the districts that were not represented. This report provides for two classes of tubing, plain or standard tubing and external "upset." All threads on plain tubing are 11½ thread and all threads on external upset are 10 thread. Extra long couplings have been provided in both types of tubing.

Further work on the subject of Rig Irons which was approved last June include several amendments. Definite sizes of grooves were adopted for the casing line pulleys and sand line sheeves. Definite approval was also given to the sprocket and chain standards which were presented by the Committee of the Standardization of Rotary Drilling Equipment. Provision has been made for the addition of a six-inch crank shaft, eight feet long. A double pulley and sand reel has been added, the general dimensions of which are as follows:

Brake Pulleys—10-inch face, 42-inch diameter.

Friction Pulleys—14-inch face, 42-inch diameter.

Shaft six inches in diameter by 10 feet long.

Pump Drums 12 inches in diameter—one 24 inches long and one 12 inches long.

An extra heavy type of Pittman stirrup was also added to be made from 30-inch material to fit a 14-foot walking beam.

Report No. 7, A. P. I. Transmission Standards contains recommendations on standard shafts, keys and keyways, chain and sprocket tooth form. The sprocket tooth form was added to the report at last week's meeting and is the result of research work conducted by C. R. Weiss.

### Rope

Tentavie specifications have been adopted on Wire Rope and Manila Cordage and the recommendations have been made to the users of wire rope that they purchase lines of this basis with the request that data be kept on the results. The same suggestions were made on manila cordage.

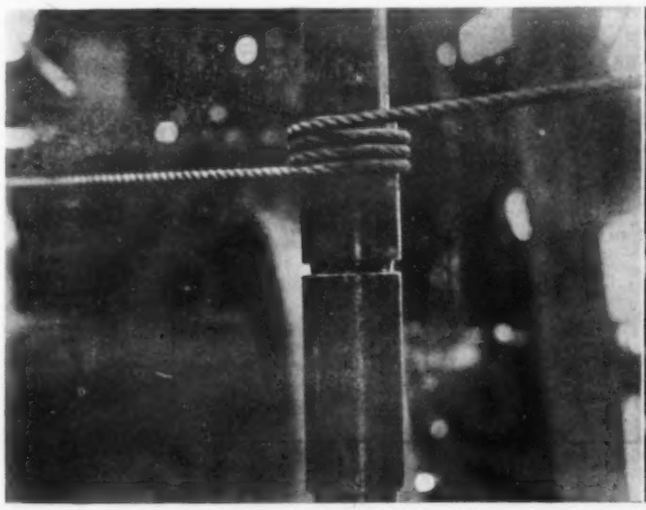
The committee on the Standardization of Pumping Equipment made definite recommendations on sucker rods on all of the various essential dimensions except the type of thread. This item is expected to be completed at the semi-annual meeting in June.

Recommendations on Standard sizes of bolt holes for engines were adopted but no definite steps taken toward establishing definite dimensions on bolt hole centers. It was recommended that the question of a definite basis for rating the horsepower of gas engines be considered and this was referred to the Manufacturer's Sub-Committee for further consideration.

Definite recommendations were approved on working barrels, both as to size and length, as well as the tolerances for the inside dimensions. Recommendations were also made on flange connections between the clutch and the gas engines.

The newly reorganized committee on fire prevention held a very important session and have adopted several methods of fire prevention as standard.

Other work will be taken up at the meeting in Colorado Springs next June.



Making up five-inch with cat line for A. P. I. Committee's inspection

Stabbing five-inch for A. P. I. inspection. C. S. Hanmore and H. L. Byrd.

# Steam Protection Against Fire For Oil Tanks

## Elaborate laboratory tests determine amount of pressure required for effectiveness

*By G. O. Wilson* *

**Just how much steam is necessary to afford proper protection for an oil storage tank? Experiences in the past, according to Mr. Wilson, in his address made before the American Peroleum Institute at Los Angeles, showed that "just steaming" was not sufficient.**

**His five conclusions have a valuable place in the story of fire prevention.—Editor.**

IT HAS been known for many years that if enough steam is supplied to a confined space containing oil vapors, it will extinguish a fire, or prevent the vapor mixture from burning in that space. Consequently steam smothering has been widely used as fire protection for oil tanks since the early days of the industry. It has been commonly felt that with a "full head of steam" turned into the vapor space of a tank, that tank was protected against ignition by exposure to fires and to a considerable extent at least against electrical storms.

However, a number of cases have been reported during the past few years in which tanks or agitators that had apparently been quite well steamed, were ignited. These occurrences raised a question as to how much steam is really needed to protect a tank. A search of the rather meagre literature on this subject yielded little information. Some theoretical computations were made, and it was attempted to check these with some small scale laboratory tests; but these miniature tests seemed to show much less steam required than the computations indicated. Our company accordingly decided that the subject was of sufficient importance to justify a through investigation. The problem was divided into two parts:

(1). Measurement of the amount of steam required to make a gaseous mixture incombustible, by means of actual ignition tests in a model tank of several cubic feet capacity.

(2). Determination of the time required to reach this steam concentration in full size tanks.

For the first test the apparatus shown in Figure 1 was used. This consisted of a 110-gallon drum with the top head removed and replaced with a loose water sealed bell cover.

### Test Apparatus

At first a little gasoline was placed in the bottom of this tank, and vaporization from its surface was depended on to supply the desired vapor mixture in the tank. It was soon found, however, that with this plan the vapor concentration could not be controlled with the desired accuracy. The circulating system shown was accordingly installed. With this equipment the fresh air in the tank at the start could be drawn out, bubbled through a graduate containing light gasoline and returned to the tank. From previous experiments it had been learned that about 25 cubic feet of vapor is produced per gallon of liquid evaporated under the conditions prevailing in these tests. Knowing this factor it was easy to compute the number of cubic centimeters that had to be bubbled off to charge the tank with a given percentage of gasoline vapor. As indicated, a fan was installed inside the test tank to insure a uniform mixture throughout.

The development of a reliable igniter was not a simple problem. An ordinary spark plug was first tried, but this was discarded after a few preliminary tests on account of the difficulties due to short-circuiting when steam was introduced. The white spot apparatus shown was finally developed. This connected to a standard 110-volt circuit through resistance which permitted 30 amperes to flow when the contacts were closed. This gave a very "fat" hot spark when the steel spring wiper left the spark point.

Steam was introduced through a nozzle pointed toward the bottom of the tank—since steam is lighter than air-gasoline vapor mixture. To measure the quantity of steam introduced, thermocouples (electrical instruments for measuring temperature) were placed in the tank, as shown. Knowing the temperature within the drum, it was possible to compute from the steam tables the percentage of steam present at any given time.

Figure 2 is a general view of the apparatus.

As a preliminary check on the performance of this equipment, tests were run without any steam in the drum—just gasoline vapor-air mixtures of varying concentrations. Results checked figures given by the Bureau of Mines and other authorities in that no ignition occurred when the vapor concentration was less than about 1¼% or more than about 6½% by volume. With mixtures just within these limits very slow combustion occurred—just enough to splash a little water out of the seal of the roof, but not enough to lift the cover appreciably. However, as the theoretically correct mixture of gasoline vapor and air for complete combustion was approached—about 3% of gasoline vapor by volume—the firing became very sharp and decisive.

Having demonstrated by these preliminary tests that the equipment provided could be depended upon to cause ignition whenever a combustible mixture was present, the steaming tests were started. The procedure followed was to fill the tank with a mixture of gasoline vapor and air, supply steam

*Secretary, Consulting Board of Engineers, Standard Oil Company of California. Paper read before Sixth Annual Meeting A. P. I., Los Angeles.

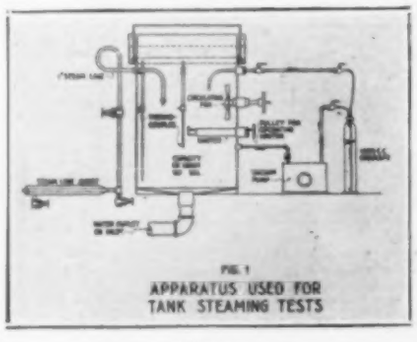



Fig. 1.

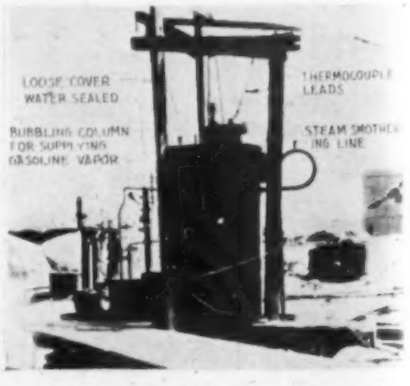



Fig. 2.—General view of test equipment

until the thermocouples indicated that the desired concentration was reached, and then attempt to fire the mixture by operating the wipe spark igniter. If the ignition occurred, more steam was used in the next test. If the mixture did not burn after sparking had continued for some time, the test was repeated a number of times, slightly varying the proportion of gasoline vapor and air, in order to make sure that the tank was charged at the start with the most combustible mixture.

### Amount of Steam Required

The preliminary laboratory tests had indicated that a concentration of about 20% steam, by volume, which is attained when the temperature has reached 140° E., would prevent combustion. These tank tests were accordingly started by steaming to about that temperature; but with this much steam in the tank, it was found that ignition occurred almost every time the spark was struck. However, the combustion was more muffled than with an unsteamed mixture. The temperature was gradually increased in successive tests; and when 160° F. had been reached, corresponding to a steam saturation of about 30%, ignition had become very uncertain. It seldom occurred the first time the spark was struck; and in a number of tests no ignition could be obtained even by operating the wipe spark as many as 100 times. Some 30 tests were run at temperatures between 160° and 170°. One very weak ignition occurred at 163°, and one other so slight as to be barely perceptible at 166°. Absolutely no ignition could be obtained at temperatures higher than 166°.

In the light of these tests, it appears that to make a combustible mixture safe, it should be steamed to a temperature of at least 166°, or say in round figures 170°, which corresponds to a saturation of about 40% of steam by volume. This applies to a gasoline-air mixture of just the right proportions for complete and rapid combustion—about 2½% to 3½% of gasoline vapor by volume. Where the mixture is richer or leaner than this, less steam will be required; 20%, a temperature of

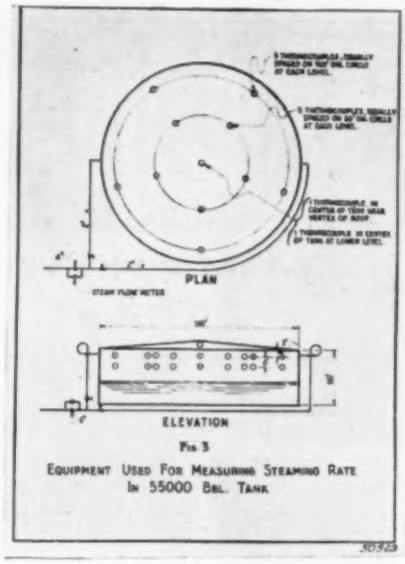



Fig 3

EQUIPMENT USED FOR MEASURING STEAMING RATE IN 55000 BBL. TANK

Fig. 3.

140°, may be enough to give protection to a large percentage of tanks, but to be safe under any conditions, the higher saturation of around 40% is necessary.

Having learned with this model apparatus the proportion of steam necessary to make the vapor space in a tank incombustible, the next step was to investigate the time needed to reach this saturation in tanks of different sizes—with steel and wooden roofs, and with steam being supplied at varying rates likely to be available.

### Test in Actual Practice

Figure 3 illustrates typical equipment used for one of these tests. It will be noted that in this 55,000-barrel tank (115 feet diameter x 30 feet high) about half full of oil, 22 thermocouples were suspended at various points in the vapor space, and steam was turned in through two typical smothering connections opposite each other near the eaves of the tank. The rate at which steam was being supplied was measured by an orifice meter, and readings were taken on all thermocouples at intervals of two or three minutes.

It should, perhaps, be emphasized at this point again that the "fog" which is commonly spoken of as steam, will not prevent ignition of a combustible mixture. Previous observations that had been made in empty tanks to which steam was being injected had shown that 5 or 10 minutes after the steam was turned on, the tank would be practically full of swirling clouds of "fog" but it was also observed that when this "fog" came in contact with the face it felt cold. The tests in the small drum previously described clearly demonstrated that a gaseous mixture was not incombustible until enough actual uncondensed steam was present to raise the temperature in the vapor space to around 170°. Hence, in these full scale tests, on large tanks, we again relied for on indication of the degree of safety that had been attained in thermocouples which measured the temperature in various parts of the vapor space and thus showed the amount of actual uncondensed steam present.

Figure 4 shows the results of a typical test run in this way. The tank used for this test had a wooden roof and was ¾-full of oil. Steam was supplied at a rate of about 150 boiler h. p. The temperatures plotted on this curve were those indicated by the thermocouple at about the middle of the vapor space, for it was found in this and other tests that with steam coming into the tank at high velocities the turbulence produced resulted in practically uniform heating of the vapor space, provided the oil level was not more than 12 feet of 15 feet below the top. The thermocouples right up under the roof and down near the oil surface, in the center of the tank and near the shell, all read within a few degrees of the same temperature. Hence, the temperatures plotted in Figure 4, which are indications of a thermocouple near the center of the vapor space, represent very closely average conditions throughout that space.

It will be noted that the temperature rose quite rapidly at the start, but as the space inside warmed up, the radiation losses thorugh the shell, of

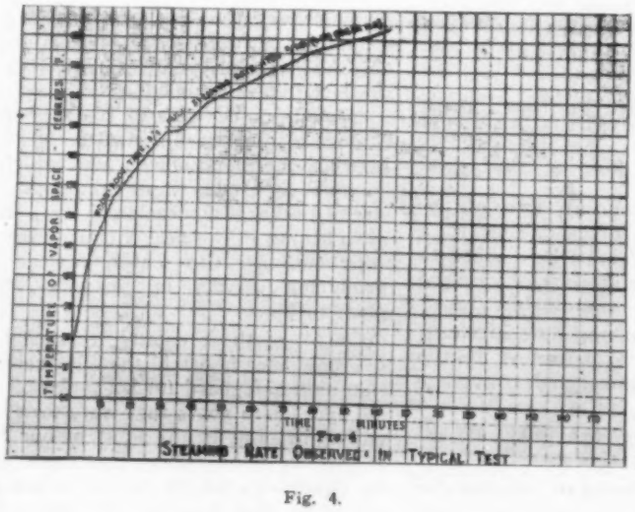



Fig. 4.

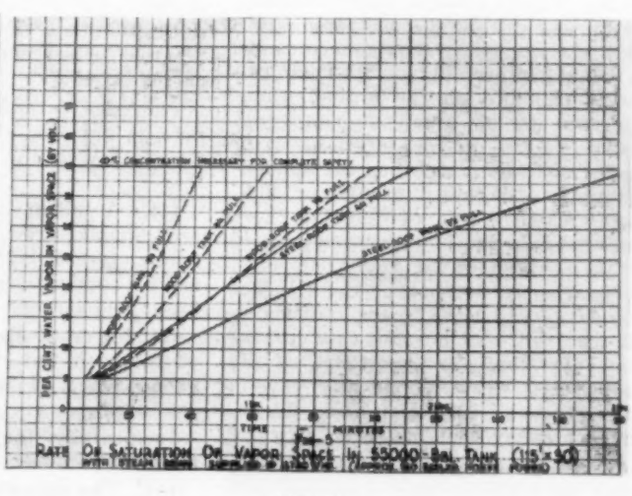



Fig. 5.

course, became greater, so that the rate of heating gradually slowed down. The safe temperature of 170° was not reached until steam had been going into the tank, at the high rate of 150 boiler h. p. used in this test, for one hour and five minutes.

A considerable number of tests were run in this way, with various steaming rates and oil heights, and in tanks with both steel and wooden roofs. From the result obtained we were able to construct an equation by means of which the rate of increase in steam concentration can be computed for any given conditions—size of vapor space, kind of tank, roof and rate of steaming. Figure 5 shows a number of curves plotted from this equation, for a 55,000-barrel tank. For all of these curves the steaming rate assumed was the same as in the typical test previously described—150 boiler h. p. Instead of plotting temperatures, as was done in Figure 4, the percentage of steam in the vapor space, which is really the important consideration, has been plotted in Figure 5. The curves show that with 150 boiler h. p. available for steaming a 115x30-foot tank, the time required to reach 40% saturation of the vapor space will vary from ½-hour to three hours, depending upon the fullness of the tank and the type of roof.

### Time Required

Even a half hour is a long time to get a tank into a safe condition, when 150 boiler h. p. is being used for this purpose and of course by the end of three hours the hazard against which we are attempting to protect by steam smothering will probably have long since passed. In the light of these test results, it is easy to understand how tanks which had been steamed for some time could easily have been ignited if subjected to exposure fires, static sparks, or atmospheric electrical discharges.

In the course of the tests on non-gas-tight wooden roof tanks, it had been observed that steam, or rather "fog," began to show at the hatches and roof cracks a few minutes after the test started—before the thermocouple inside showed that any effective concentration of steam had been obtained. To an observer standing on the ground, there appeared to be practically as much steam leaking out during these early stages of the test as when the concentration had increased to 20% or 30%. This created the impression that there might be a local concentration of steam, just under the roof; but since, as previously mentioned, the thermocouples placed close to the roof showed that this was not the case, it was concluded that the appearance of the tank being steamed evidently gave a very unreliable indication as to the degree of safety that had been attained.

To check up more definitely on this point some further tests were run with the model tank, with minor changes

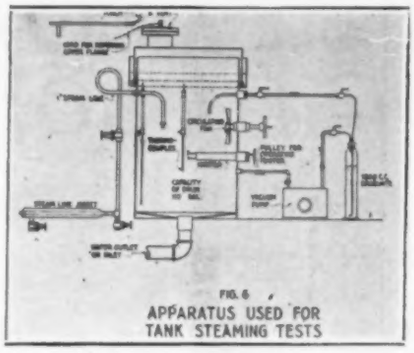


FIG. 6
APPARATUS USED FOR TANK STEAMING TESTS

Fig. 6

in the cover as shown in Figure 6—these changes consisting mainly of inserting a six-inch outlet, and resting on top of it a loose blind flange, with a cord attached so that it could be jerked off when desired. A torch was mounted so that an operator at a distance could bring it up close to this vent after it had been uncovered.

A number of tests were run with this apparatus which demonstrated that even though a tank has been steamed to such an extent that copious clouds of "fog" will issue from the vent when this is uncovered, a flash back is liable to occur if a flame is brought near the open vent before the safe concentration of 40% of steam has been reached inside the tank. These tests incidentally demonstrated that a mixture which has not been steamed to a safe condition is just as liable to be ignited by any exposure fire as by the hot electric spark used in the previous series, and in some tests where the tank has been steamed to a safe condition so that ignition would not occur when the torch was brought up to the vent, the steam was shut off, and inside of about 30 seconds, enough condensation had occurred so that the mixture again became combustible and a flash-back occurred. In a few tests the steam nozzle was pointed up so as to discharge directly through the vent, and it was found that if the steam were well distributed throughout the opening, it might prevent a flash-back into a tank containing a combustible mixture. Further tests along this line on actual tank breather valves and vents will be discussed later.

The tests described thus far furnish definite answers to the questions that were asked at the start; they showed that—

(1). A steam concentration of approximately 40% corresponding to a temperature of 170° must be reached to make a combustible mixture of gasoline vapor and air non-inflammable.

(2). A relatively long time is required to reach this concentration in the vapor space of tanks under average conditions.

Incidentally they brought out the facts that—

(3). The appearance of considerable quantities of "fog" issuing from roof cracks or hatches is no sign a tank is in a safe condition.

But these very answers served to raise new questions:

### Why Use Steam?

(1). If steam is so relatively slow and unreliable in providing the desired protection, why has it been regarded for so many years as a safeguard which should not be omitted from any tank within the range of a boiler plant. And—

(2). If it is of such doubtful value, should we continue to use it for tank protection?

An attempt to answer these questions requires first of all that we take into account the change in the type of tank roof construction that has occurred quite generally throughout the industry in the past few years. Until recently a great majority of our large storage tanks were equipped with wooden roofs, covered either with galvanized iron or tarred paper. In but few cases were such roofs even approximately gas-tight. The wind generally blew into the cracks on one side of the roof; and a mixture of air and oil vapor seeped out through those on the other side. This created a fire hazard in two ways. First, the combustible vapors leaking out through a multitude of openings in the roof were lible to be ignited by any stray brand or electrical discharge; and second, the fresh air leaking into the tank diluted the vapor mixture inside the tank to combustible proportions.

Under these conditions, in case of a threatened lightning storm or exposure fire, about the only hope of protection was to inject steam as fast as possible. If the tank were quite full, or if it were near enough to the boiler plant so that a high rate of steam delivery was available, or if the roof were fairly tight, so that not enough air had leaked in to dilute the mixture to the point of maximum combustibility, there was a fair chance that, in a relatively short time, a safe condition would be reached.

Furthermore, as a protection against atmospheric electrical discharges, steaming such loose-roofed tanks probably had another good effect. This is the fact that condensed steam may collect on the under side of the roof, and furnish temporary electrical connection between the metal sheets with which it is covered. Under these circumstances, static discharges occasioned by a bolt of lightning in the near vicinity may be conducted by the water, instead of producing sparks in jumping from place to place.

On all of these counts, it is easy to see how steam established its reputation as a safeguard for oil tanks of the old type, with roofs that were far from gas-tight. But in the light of our test results we must realize that there may be conditions where safety is not attained by this process until steam has

been going into the tank for a long time.

### Tight Tanks

When we consider a tank with a modern gas-tight steel roof, we find the picture entirely different. In the first place, since there are no cracks for the wind to blow through, the mixture inside is much more likely to be saturated with oil vapors to such an extent that it will not burn. A graphic demonstration of what this may mean was afforded in a fire at Monterey a year or so ago. Six tanks containing crude burned; and, as is characteristic of crude oil fires, each boiled over during the course of the fire. On the downhill side of these tanks stood a 7,500-barrel tank containing gasoline. When the flaming oil from the first boil-over flowed down around this tank, the sudden heating up of the vapor space pushed off the loose water-seal cover of the roof manhole, and the vapors issuing from this 11-inch opening burned as a torch which at times reached a height of several feet.

When the boil-over around this tank had burned up, and the tank started to cool off, this torch died down and quietly snuffed itself out. The vapor inside the tank was too rich to burn; and as there was no outside heat to push this vapor out of the manhole, there was nothing to feed the fire. This experience was repeated a number of times during the 24 hours that the crude tanks burned; immediately after each boil-over a bright torch could be seen burning at the manhole of the gasoline tank, and each time the boil-over oil burned out, the torch died down and snuffed itself out. It was reported that after the fire a gauge of the tank showed that less than one inch of gasoline had been evaporated.

When a tank contains a vapor mixture as rich as did this gasoline tank there is obviously nothing to be gained by forcing steam into it. As a matter of fact, such injection of steam might do actual harm, in either of two ways. First, it would force some of these rich vapors out through the vent, perhaps to be ignited by any exposure fire that might be near. The experience at Monterey demonstrated that such a vent fire may be harmless, but it is certainly undesirable, and under certain conditions might so warp the roof that holes would open up through which air could leak in and dilute the mixture to a combustible condition. And such a vent fire is less likely to occur if the tank is allowed to stand untouched, than if a large amount of vapor is forced out by the inaction of steam.

The second and more serious difficulty that may be encountered if steam is injected into a tank containing a rich mixture, develops in case the steam is for any reason shut off while there is still an exposure fire in the vicinity. As observed in the tests with the small drum, previously mentioned, when steaming stops, condensation occurs

Fig. 7. Vent smothering test with steam just turned on

very rapidly, and considerable quantities of air are thus drawn into the tank. This air will dilute the mixture immediately under the vent to a combustible condition. Furthermore, the in-draft will tend to suck flames from any nearby exposure down the vent.

### Too Rich Vapors

Realizing these facts, it is evident that by injecting steam into a gas-tight tank where the mixture was originally too rich to burn, one places himself in the unenviable position of the fellow who caught a bear by the tail. He has to hang on—and this may not always be possible, in case of broken steam lines, need for steam to transfer oil, or other contingencies.

There are, of course, some conditions in which the vapor mixture inside a gas-tight tank will not be too rich to burn, even though there are no leaks in the roof for the wind to blow through. For example, the oil in the tank may have a low enough vapor pressure so that it will not saturate the space above it sufficiently to produce this too-rich mixture. And even in those tanks that do normally contain a too-rich mixture, air will be drawn in when the tank cools off at night, or when oil is pumped out of the tank. We have made a great many observations, particularly on gasoline tanks, which have indicated that the dilution which takes place in this way is ordinarily confined to a comparatively small volume under the vent.

In fact, unless the air is drawn in quite fast, by a rapid delivery of oil from the tank, diffusion will result in keeping practically the entire vapor space of a gasoline tank in a condition too rich to burn.

There are thus relatively few conditions where we have a combustible mixture inside a gas-tight tank. Where such conditions do exist, it may at first glance seem that here is a case comparable to that of the loose-roofed tank, and that the best thing to do is turn in steam as fast as possible in case the tank is exposed to fire, and hope that there will be time enough to get in a sufficient amount to make the tank safe before the flame actually comes near the vent. Further consideration, however, shows that this is not the best plan for a number of reasons.

In the first place, the very fact that the tank has a steel roof, which radiates heat much more rapidly than the old wooden roofs, will, as previously explained, result in a much longer time being required to get a safe concentration of steam inside the tank. In the second place, injection of steam will immediately start forcing a combustible mixture out through the vent, and this presents a more serious hazard than in the case previously discussed, where a mixture inside the tank was too rich to burn. For if these issuing vapors should become ignited they might flash back into the tank—although supplementary tests which were conducted showed that even with a mixture of combustible proportions coming out through a vent there are a number of conditions that will tend to prevent a flash-back from occurring.

### Protection of Gas-Tight Tanks

However, it is evident that there are disadvantages to injecting steam into a gas-tight tank in which the mixture is combustible, just as there were in the case where the mixture is too rich to burn.

This does not mean, however, that steam has no place in the protection of gas-tight tanks. As a matter of fact, we found by a number of tests of steam smothering jets applied at the vents of such tanks, that this form of steam protection is likely to be more effective than the best protection we were ever able to give the old loose-roof tanks under most conditions. These tests showed that with a very moderate rate of steam flow—¼ to ½ the rates used

Fig. 8.—Fire cu:

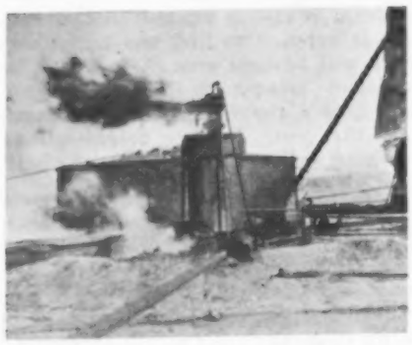


Fig. 9.—Air-gasoline vapor fire at breather valve

in the previously described tests where steam was injected into the tanks—we could extinguish a hot vent fire, or prevent a flash-back in the case of combustible mixtures issuing from the vent. And the best part of it is that this protection is available a few seconds after the steam reaches the vent—instead of having to wait from a half hour to three hours, which we found to be the case when steam was injected into the tank.

Figure 7 shows a vent steaming test on one of our old type of tank breather valves having two pairs of pressure and vacuum ports closed by discs which seat in a mercury seal, placed at the top of a large riser through which mixtures of natural gas and air were discharged. A steam nozzle was set up so that the jet would pass under the hood of the valve in Figure 7 the steam has just been turned on, and the fire is still burning, the blow pipe action of the steam making the flame practically invisible. Figure 8 was taken a moment later—just after the steam had extinguished the fire. With this equipment it was found that with rich mixtures of gas and air being discharged at rates up to 25,000 cubic feet per hour, the fire could be blown out in a few seconds with steam supplied at rates as low as 40 boiler h. p.

The tests illustrated in Figures 7 and 8 were made with natural gas-air mixtures. Figure 9 shows a test in progress on one of our present single-port type breather valves discharging 27,000 cubic feet per hour of rich gasoline-vapor-air mixture. This rate of discharge would occur only if a tank containing very little volatile gasoline were being pumped into, at a rate around 5,000 barrels per hour, which is of course a condition more severe than anything likely to be encountered in practice. Figure 10 shows the cloud of steam which extinguished such a fire a few seconds after it was turned on at a rate of about 70 boiler h. p., and Figure 11 illustrates the slotted ring surrounding the outlet of the valve through which the steam was supplied.

Fig. 10.—Just after the fire had been extinguished

In these tests we were extinguishing fires which were burning at vents through which rich mixtures were being expelled. Figure 12 shows the set-up for a test which a combustible mixture was to be expelled through the open vent, and steam delivered from the jet to prevent a flash-back. The flaming torch shown in Figure 13 was held in various positions around the vent, but no flash-back occurred as long as the steam rate remained higher than about 30 boiler h. p. In some tests a flash-back occurred when the rate was reduced to 20 boiler h. p.

A considerable number of tests of the sort illustrated in the last few pictures were run on various types of vent. They all lead to the same conclusion—that a steam jet delivering from 30 to 50 boiler h. p. will extinguish a vent fire of rich vapors, or will prevent a flash-back of a combustible mixture, provided the steam is thoroughly distributed around the vent opening. Higher steaming rates may be necessary under especially severe conditions, but a jet delivering 75 boiler h. p. was able to protect vents discharging as much vapor as would ever be likely to be encountered in practice.

A detail in connection with the installation of these jets which might appear to be of minor importance, but which really demands careful consideration, is the fact that they should not be so placed as to discharge the blast of steam directly into the vent, for if this is the case a surprising amount of back-pressure may build up in the tank—enough to open any emergency relief hatch with which the tank may be provided, which is just what should be carefully avoided.

The tests described have demonstrated that smothering jets can be successfully applied to a number of different types of tank vents and breather valves. However, this form of steam protection is a rather new development and further experience will doubtless disclose many improved methods of applying such jets to the various forms of tank breather valves and vents that are in service throughout the industry.

### Summary

The various tests that have been described have brought out the following facts:

(1). A considerable amount of steam must be introduced to a gaseous mixture to make it incombustible. When gasoline vapor and air are mixed in just the right proportions for complete combustion—about 3% of gasoline vapor by volume—40% of steam must be introduced to obtain safe conditions; this corresponds to a temperature of about 170° F., throughout the vapor space.

Fig. 11.—Steam smothering ring for breather valves

(2). With steam being supplied at 150 boiler h. p. to the vapor space of a 55,000 barrel tank, a period ranging from one-half hour to three hours will be required to reach this safe steam concentration.

(3). The appearance of steam or "fog" issuing from the roof cracks or hatches of a tank is no indication that the space inside has been steamed to a safe point.

(4). If a tank containing volatile stock is equipped with a modern gas-tight steel roof, the vapor space inside will be either (a). Filled with a mixture too rich to burn, in which case there is nothing to be gained by injecting steam, and doing so may actually introduce a hazard or, (b). Under comparatively rare conditions, it may be filled with a combustible mixture, in which case a long period of steaming at a high rate is generally necessary to attain a safe condition, during which combustible gases will be expelled from the vent.

(5). Regardless of the condition inside the tank, the only place where a gas-tight tank can be fired is at the vent. A steam jet delivering 35 to 50

Fig. 12.—Equipment used in the test for preventing flash-back through open valve

# Magnolia Building New Line from Arkansas to Beaumont

## Material moving for 265-mile welded line to parallel gas line from North Louisiana

Dallas, Texas.—Producing leases and tank farms containing about four million barrels of crude owned by Magnolia Petroleum Company in Louisiana and Arkansas are to be connected by pipe line to the company's refinery on the Neches River at Beaumont. The construction of this pipe line project will involve 265 miles of eight-inch welded pipe and 45 miles of four-inch pipe. Six main line pump stations, and an auxiliary crude tank farm at DeBerry, Texas, will be included in the project, which is the first major pipe line construction program to be started during 1926 in the Mid-Continent. Magnolia plans to have the Arkansas-Louisiana crude line in operation towards the close of next summer, and materials are now moving from the steel mills.

Magnolia has been very active in pipe line construction work in the Mid-Continent within the past two years, having completed 182 miles of eight-inch welded line to the Luling field in Southwest Texas during 1924, and also added about 100 miles of eight-inch pipe loops to its trunk line system in North Texas and Oklahoma. The Magnolia Gas Company, a subsidiary of Magnolia, completed 215 miles of line varying in size from 14 to 18-inch from Cotton Valley field, Louisiana to the Beaumont refinery at the close of 1924. The mileage of Magnolia's crude and gas lines will be increased 782 miles within a period of two years when the new line to Louisiana and Arkansas is completed.

Magnolia's crude line to Louisiana and Arkansas fields will make use of the right-of-way of the Magnolia Gas Company's line from Beaumont to the north end of the gas line at Serepta station, near the Cotton Valley field, a distance of 215 miles. Right-of-way has been purchased by the Magnolia Pipe Line Company from Serepta to tank farms owned by Magnolia in the El Dorado and Smackover fields, Arkansas, a distance of about 50 miles.

Six main line pump stations will be erected by Magnolia on the Louisiana-Arkansas line, and the most economical power available at each station will govern the type of equipment to be installed. The El Dorado station on the north end of the line will be equipped with oil burning engines; Serepta station will use gas engines; electric power will be employed at the Latex station, near DeBerry, Texas; station at Center, Texas, will use gas; Magasco station will be electrified; and gas engines will be used at the last station on the line near Kirbyville, Texas.

At each main line station two 55,000 barrel steel tanks will be erected, while a tank farm consisting of about 12 tanks of similar capacity will be built at the Latex station. A number of small lateral lines will be built by Magnolia from its crude trunk line to producing leases, and the longest will be an extension of 45 miles of four-inch pipe from Latex station to its production and tank farm at Bull Bayou, La., where approximately 850,000 barrels of crude is held in steel tanks. Magnolia operates in Louisiana under the name of Fortuna Oil Company, which has about 2300 barrels of daily production in Haynesville, Bull Bayou and Cotton Valley fields. Magnolia Petroleum Company is producing about 2600 barrels of crude daily in the El Dorado-Smackover district, Arkansas, and at the close of last month had 863,415 barrels of Smackover heavy oil and 464,825 barrels of light oil in steel tanakge in this district. Arrangements are being made to heat the heavy oil before putting it in the pipe line.

The route of the Louisiana-Arkansas crude line requires three difficult river crossings over the Neches, Sabine and Red Rivers, while marsh and heavily timbered lands cover most of the distance of the line. By parallelling the Magnolia Gas Company's line across these difficult stretches considerable saving in construction costs will be gained, since the construction crews on the gas line have blazed a trail.

The trench digging, pipe stringing and back filling of trenches will be contracted out by Magnolia, while pipe welding and application of insulation will be done by company employes. The entire pipe line will be painted with a primer coat of paint followed by a heavy coat of pipe line paint to be furnished by the American Paint & Supply Company. Asbestos felt paper manufactured by the Philip Carey Company will be wrapped around the pipe immediately after the application of the heavy insulation paint, and a second coat of heavy paint then is put on the paper to further exclude water and destructive elements from reaching the pipe.

## Signal Hill Extension Has 30 New Producers

Long Beach, Calif.—Exploitation of the Los Cerritos extension of Signal Hill field has been carried on with remarkable rapidity recently, with the result that there are now 30 new producers in the district yielding 8860 barrels per day, a well average of better than 275 barrels.

Action of the Associated Oil Company in its decision to develop the Jonte lease, located on Pacific Avenue and in the midst of producing wells of the extension, is being awaited with interest by other operators.

Among the more important developments of the boom activities at Long Beach were the following completions: Fred Fitch's Fred Fitch No. 1, which made 700 barrels of 22.5 degree Baume gravity oil from 4460 feet; Henderson Petroleum Company's Stephenson No. 1, 400 barrels of 22.1 gravity from 4481 feet; Repetto Hills Oil Company's No. 3, 475 barrels of 23 gravity from 4450 feet; Rainbow Petroleum Company's No. 5, 200 barrels of 21 gravity from 4570 feet, and H. L. Whiston's No. 2, 350 barrels from 4400 feet.

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boiler h. p. will, if properly distributed around the vent, extinguish a vent fire, or prevent a flash-back into a combustible mixture under ordinary conditions. Extreme conditions can be controlled with 75 boiler h. p.

(6). Such vent protection is available a few seconds after the steam reaches the nozzle—instead of having to wait for periods that might be as long as several hours, if steam were injected into the tank.

In conclusion, it may be pointed out that the practice of injecting smothering steam into the vapor space of tanks has probably filled a useful place in the fire protection measures available for tanks with non-gas-tight roofs. The modern gas-tight steel roof needs little protection of any kind, but where steam is used it can apparently do the most good in the shape of a jet protecting the vent.


### Acknowledgments

The tests described in this paper were carried on under the general direction of Mr. H. H. Hall, chief engineer of the Standard Oil Company (California). They were actually conducted by Messrs. J. A. Ryan of the manufacturing Development Department; H. E. Geyer of the Engineering Department, and D. W. Rohrback of the Pipe Line Department—to all of whom, as well as to Mr. M. B. Anfenger of the Engineering Department, the writer is indebted for suggestions regarding the paper.

# Boling Only New Coastal Field Due for Drilling Boom

## Blocked acreage around other four new discoveries will mean orderly development

*By Wallace Davis*
*Staff Representative*

Houston, Texas.—Discovery of five new productive areas in the Gulf Coast since December 13 strengthens the position of this territory as one of the leading potential sources of oil. All of the five newly discovered areas are yielding from deep sands off the edges of domes, four of them being the first production for their several areas and the fifth a deep sand discovery 1500 feet from the old production of Spindletop.

The new coastal discoveries will in all probability not be followed by the hurried development characteristic of new fields with one exception. Boling dome, opened by The Texas Company December 13, with a 10,000 barrel initial producer, presents the only possibility for a boom in that the arrangement of the leases around this dome is the only situation to warrant hurried development. The Nash, Orchard, Piedras Pintas domes and new Spindletop extension are blocked by individual companies in such a way as to insure sufficient protection against close in drilling by competitive companies.

Boling is now the high light in Gulf Coast activity, and development of the probable productive territory around the discovery well is going at such a stride as to force considerable offsetting and bring production of the potential field to a high mark within the next two months provided tests now going down only a few hundred feet from the producer hit the pay.

**Boling Active.**

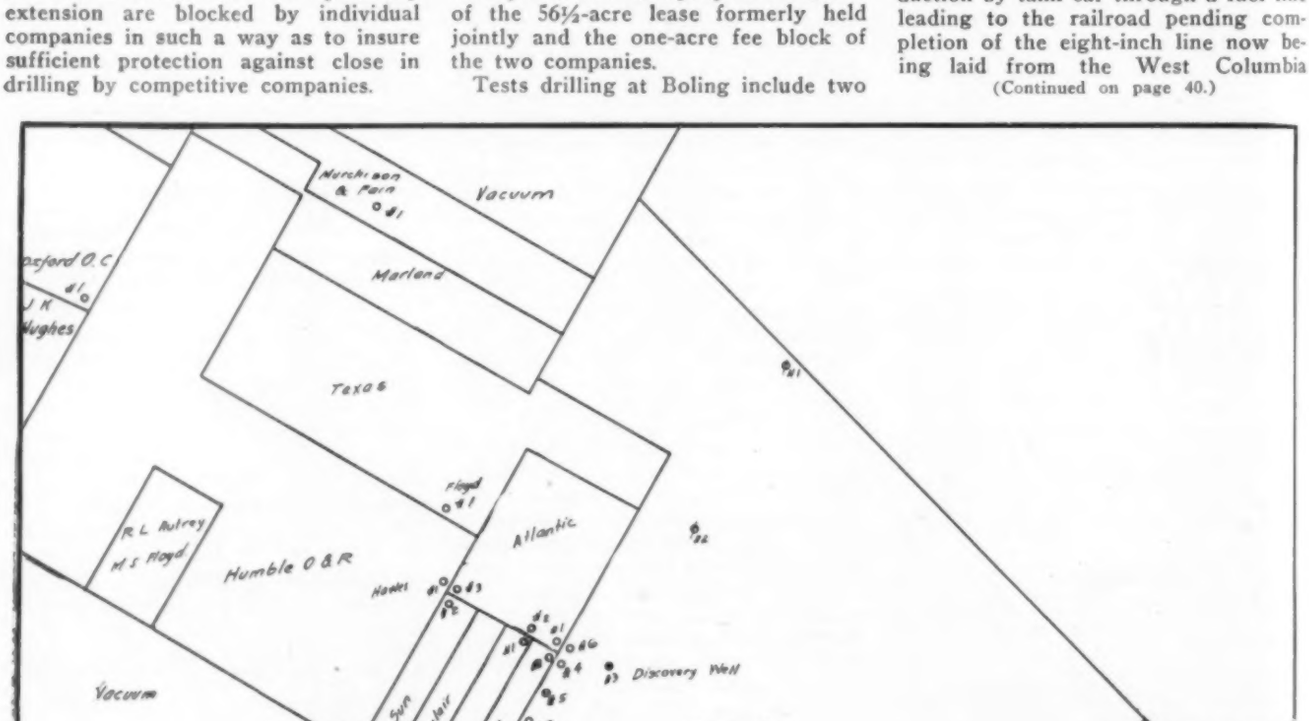
Ten companies hold acreage around Boling dome which has probabilities of producing. Of the interested companies eight have already started activity. Six tests are going down on Boling locations and 10 other locations have been made with derricks standing on about half of these. The accompanying map shows the location of various companies' tests as well as the latest blocking of acreage including the division by the Sun Company and Sinclair of the 56½-acre lease formerly held jointly and the one-acre fee block of the two companies.

Tests drilling at Boling include two of the Atlantic, and one of the Texas Company, Gulf, Sun and Sinclair. Atlantic's No. 1 Taylor is due to hit the pay within the next 10 days. It was drilling around 3,200 feet early this week. The No. 2 is below 1500 feet and the No. 3 is rigging up. The Texas Company is around 1700 feet in its No. 4 and building derricks for Nos. 5, 6, and 7. Both the Sun and Sinclair spudded in their No. 1 tests late last week and are now around the 1,000-foot mark. More than 3,000 feet to the south-east of the producer, Gulf Production Company spudded its Chase No. 1 in block 9 the first of this week.

**Making 4500 Barrels.**

After six weeks of flowing the Taylor No. 3, discovery well, is turning out a little more than 4,500 barrels with a strong gas pressure holding up. The Texas Company is still moving the production by tank car through a fuel line leading to the railroad pending completion of the eight-inch line now being laid from the West Columbia

(Continued on page 40.)




Arrangement of small blocks of acreage at Boling offers boom if present drilling brings pay

# Registration American Petroleum Institute

## Sixth Annual Meeting, Los Angeles, California, January 19-21, 1926

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### C

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| O. D. Donnell, The Ohio Oil Company | Findlay, Ohio |
| J. C. Donnell, The Ohio Oil Company | Findlay, Ohio |
| A. D. David, Continental Oil Company | Denver |
| hemen Gates Dawes, Jr., The Pure Oil Co. | Cincinnati |
| H. E. Dralle, Westinghouse Electric Company | East Pittsburgh |
| E. S. Dunbar, Standard Oil Co. of Calif. | San Francisco |
| A. C. Derieux, Honolulu Con. Oil Co. | San Francisco |
| N. W. Daw, Shell Co. of Calif. | San Francisco |
| D. E. Dickey, General Petroleum | Los Angeles |
| James M. Douglas, Union Oil Co. of Calif. | Fort Collins, Colo. |
| G. A. Dye, H. F. Wilcox Oil & Gas Co. | Tulsa |
| Wm. T. Deacon, St. Louis Sur. Pet. Co. | St. Louis |
| T. A. Dines, The Midwest Refining Company | Denver |
| E. Deane | San Antonio, Texas |
| M. A. Danley | Wichita Falls, Texas |
| Augustus Davis, Jr., Davis Welding & Mfg. Co. | Cincinnati |
| C. D. Davis, C. J. Tagliabue Mfg. Co. | San Francisco |
| E. K. Davis | Los Angeles |
| T. D. Davies, National Tube Company | Pittsburgh |
| Don Dawson, General Pet. Corp. (Wash.) | Seattle |
| J. J. Deaner, Windsor Oil Company | Okmulgee |
| D. A. Dechman, Jones McLaughlin, Inc. | Long Beach, Calif. |
| A. G. Derby, Derby Oil Company | Wichita, Kansas |
| Marion E. Dice, General Petroleum Corp. | Los Angeles |
| D. V. Dierks | Kansas City |
| Henry L. Doherty, Henry L. Doherty & Co. | New York |
| Mr. E. E. Dorresten, C. F. Braun & Company | Alhambra, Calif. |
| W. A. Dudley | Sacramento, Calif. |
| R. L. Duff, Standard Oil Co. of N. J. | Rosella, N. J. |
| Geo. Duncan, National Tube Company | McKeesport, Pa. |
| Jas. B. Dunivan, Dunivan Tool & Supply Co. | Breckenridge, Texas |
| J. J. Dunn, National Tube Company | Pittsburgh |
| Earle Derby, Pacific Oil Company | San Francisco |
| Frank DeGanahl, M. W. Kellogg Company | Los Angeles |
| J. H. Dickson, Gibson Dohnsen Oil Corp. | Tulsa |
| Voctor N. Dupuy, Union Oil Company | Los Angeles |
| Rodney S. Durkee, General Petroleum Corp. | Los Angeles |
| H. C. Dickinson, Bureau of Standards | Washington |
| Dr. T. G. Delbridge, Atlantic Refining Company | Philadelphia |
| Fayette B. Dow, American Petroleum Institute | Washington |
| C. E. Donaldson, Shell Co. of Calif. | San Francisco |
| B. G. Dawes, Pure Oil Company | Columbus, Ohio |
| E. R. De Ong, University of California | Berkeley |
| H. G. Davies, Superior Oil Corp. | Lexington, Ky. |
| T. J. Donoghue, The Texas Company | Houston |
| L. D. Dimm, Standard Oil Company | El Segundo, Calif. |
| Col. B. W. Dunn, Bureau of Explosives | New York |
| David Donoghue, Texas Pacific Coal & Oil Co. | Fort Worth |
| Alexander Deussen, Marland Oil Company | Houston |
| R. O. Dulaney, Fort Ring Oil & Gas Company | Fort Worth |
| Fayette B. Dow, American Petroleum Institute | Washington |
| Edwin T. Dumble, Rio Bravo Oil Co. | Houston |
| A. P. Davis, Sun Oil Company | Dallas |
| O. H. Dishington, Imperial Building Company | Chicago |
| Ray L. Dudley, Gulf Publishing Company | Houston |

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|---|---|
| W. R. Edwards, Union Oil Co. of California | Los Angeles |
| Edward Everett, Tubbs Cordage Company | San Francisco |
| C. D. Erlewine, Marion Machine F. & S. Co. | Dallas |
| D. G. Ewing, Director of A. P. I. | Fresno, Calif. |
| Gustav Egloff, Union Oil Products Company | Chicago |
| J. E. Elliott, Elliott Core Drilling Company | Los Angeles |
| William A. Edsall, J. F. Allen | Philadelphia |
| W. S. Evans, Lucey Mfg. Corp. of Tenn. | New York |
| A. C. Ebie, Magnolia Pet. Company | Dallas |
| C. B. Ellis, Gulf Refining Company | Pittsburgh |
| Oliver C. Edwards, Security Oil Corp. | Los Angeles |
| J. M. Evans, Standard Oil Co. of Calif. | San Francisco |
| Hugh B. Evans, Jr., Hugh B. Evans, Inc. | Los Angeles |
| H. F. Emme, General Petroleum Corp. | Los Angeles |
| V. L. Ehrenclou, Union Oil Company | Los Angeles |
| J. W. Evans, Ind. Oil Prod. Agency | Los Angeles |
| R. W. Elliott, R. W. Elliott Company | Los Angeles |
| Walter A. English, Standard Oil Company | Taft, Calif. |
| O. W. Edgar, Detroit Graphite Company | Houston |
| H. L. Eggleston, Pan American Petroleum Company | Los Angeles |
| W. P. Eichbaum, Worthington Pump & Mach Co. | New York City |
| Paul Endacott, Phillips Petroleum Company | Bartlesville |
| E. J. Erdman, Erdman Pro. & Deg. Co. | Oklahoma City |
| W. L. Erdman, Erdman Pro. & Deg. Co. | Oklahoma City |
| Augusta G. Ellerton | Los Angeles |
| W. W. Erlewine, Marion Machine Foundry & Sup. Co. | Long Beach |
| J. M. Evans, Pacific Oil Company | San Francisco |
| A. H. Emerson, The S. M. Jones Company | Toledo, Ohio |
| C. A. Ellis, Standard Oil Co. of N. Y. | New York |
| R. S. Ellison, Midwest Refining Company | Casper |

F

| Name—Representing | Home Address |
|---|---|
| J. F. Faber, Standard Oil Co. of Calif. | El Segundo, Calif. |
| K. R. Farr, Wm. S. Barnickel & Company | St. Louis, Mo. |
| C. A. Friedmann, Union Oil Co. of Calif. | Los Angeles |
| Roy Fry, Pacific Oil Company | Los Angeles |
| H. S. Ferguson, Superior Oil Company | Los Angeles |
| F. E. Foster, Sentinel Oil Company | Los Angeles |
| Ethelbert Favary, Moreland Motor Truck Co. | Burbank, Calif. |
| D. M. Folsom, General Petroleum Corp. | San Francisco |
| W. M. Fulton, Fulton Oil Company | Kevin, Montana |
| H. G. Fowler, Associated Oil Company | San Francisco |
| Hubert C. Ferry, Union Oil Co. of Calif. | Los Angeles |
| F. S. Feisthamel, American Seamless Tube Corp. | Los Angeles |
| W. N. Flickinger, The Aldrich Pump Company | Los Angeles |
| W. C. Franklin | Tulsa |
| Theo. V. Fowler, Jr., General Chemical Company | New York |
| F. A. Foersterling, Associated Oil Company | Los Angeles |
| G. E. Fentress, General Petroleum Corp. | Los Angeles |
| W. S. Farish, Humble Oil & Refining Company | Houston |
| C. Falilstrom, American Mang. Steel Company | Chicago Heights |
| Victor E. Flodin, Crane Company | Chicago |
| J. E. Fitzpatrick, Deep Rock Oil Company | Fort Worth |
| A. L. Fink | Tulsa |
| M. B. Fink, Oil Well Supply Co. of Calif. | Los Angeles |
| C. M. Fuller, Richfield Oil Company | Los Angeles |
| H. H. Fleming, Oil Conservation Engr. Co. | Cleveland |
| W. W. Fondren, Humble Oil & Ref. Co. | Houston |
| W. M. Fulton, Fulton Oil Company | Kevin, Mont. |
| J. Fletcher Farrell, Sinclair Consolidated | New York |
| Boris Finaly | Paris, France |
| Geo. A. Frazier, Westinghouse Elec. & Mfg. Co. | Los Angeles |
| W. R. Francisco, Shaffer Oil & Ref. Co. | Tulsa |
| W. T. Funk, Carter Oil Company | Denver |
| J. H. Fenton, Westinghouse Elec. & Mfg. Co. | Los Angeles |
| Geo. P. Foster, Devonian Oil Company | Tulsa |
| W. H. Ferguson, Continental Oil Company | Denver |
| E. F. Fitzpatrick, American Pet. Prod. Co. | Tulsa |
| F. Julius Fohs, Pet. Div. A. I. M. E. | New York |
| J. A. Fitzpatrick, Nickel Plate Road | Cleveland |
| E. M. Fridy, U. S. Tool Company | Long Beach, Calif. |
| F. V. Faulkner, Magnolia Petroleum Company | Dallas |
| W. S. Fitzpatrick, Prairie Oil & Gas Company | Independence, Kans. |
| W. C. Franklin, Tidal Oil Company | Tulsa |
| Wm. Francis, Natl. Transit Pump & Mach. | Denver |
| E. H. Fisher, Pacific Wire Rope Company | Los Angeles |
| H. V. Foster | Bartlesville |
| Geo. H. Frick | New York |
| L. M. Fanning, Oil & Gas Journal | New York |
| Paul I. Fagan, Paul I. Fagan & Company | San Francisco |
| H. A. Forsburg, Standard Oil of California | Richmond, Calif. |
| N. V. V. Franchot | Olean, N. Y. |
| Thos. H. Fox, Illinois Central R. R. | Los Angeles |
| Chas. E. Foster, Crew-Levick Co. | Philadelphia |
| D. S. Faulkner, Union Tool Company | Torrance, Calif. |
| Harmon F. Fisher, Pet. Rectifying Co. of Calif | Los Angeles |
| H. C. Farquhar, Union Oil Co. of Calif. | Los Angeles |
| Fred D. Freeman, Texas Production Company | Denver |
| I. B. Funk, Union Oil Co. of Calif. | Los Angeles |
| H. W. Fletcher, Hughes Tool Company | Houston |
| Frueauff, Harry D. Henry L. Doherty & Co. | New York |
| Thos. Fleming, Jr., Oil Well Supply Company | Pittsburgh |
| W. S. Farish, Humble Oil & Ref. Company | Houston |
| T. J. Flannelly, Prairie Oil & Gas Co. and Prairie Pipe Line Company | Independence, Kans. |

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|---|---|
| Addison H. Gibson, Gibson Dohness Oil Corp. | Tulsa |
| S. L. Gillan | Los Angeles |
| T. C. Gillespie, Beacon Oil Company | Boston |
| Eugene F. Goggins, Dunn Mfg. Company | Oxnard, Calif. |
| Ronn E. Goodwin | Toledo, Ohio |
| F. V. Goodwin, Oceanic O. Co., Bu. V. O. Co. | Los Angeles |
| John L. Gray, Shaffer Oil & Refg. Company | Tulsa |
| W. R. Guiberson, The Guiberson Corp. | Los Angeles |
| V. B. Guthrie, National Petroleum News | Cleveland, Ohio |
| F. W. Gay, De La Vergne Machine Company | New York |
| Geo. C. Golden, Victory Petroleum Company | Wichita Falls, Texas |
| Lewis G imm, Franklin Oil Works | Franklin, Pa. |
| H. C. Gloeckler, Halliburton Oil Well Cemt. Co. | Duncan, Okla. |
| R. W. Garman, Union Oil Co. of California | Los Angeles |
| Wm. Groundwater, Union Oil Company | Los Angeles |
| W. F. Gates, Prairie Pipe Line Company | Independence, Kans. |
| F. D. Grunder, Jones & Laughlin Steel Corp. | Pittsburgh |
| L. A. Greene, Radio Petroleum Company | Fort Worth |
| O. H. Gundlach, Sinclair Oils | New York |
| B. I. Graves, Associated Oil Company | San Francisco |
| E. G. Godard, Goulds Mfg. Company | Houston |
| William V. Gross, Gulf Publishing Company | Houston |
| J. L. Glennon, General Petroleum Corp. | Los Angeles |
| H. R. Gallagher, Shell Company of Calif. | San Francisco |
| G. C. Gester, Standard Oil Company | San Francisco |
| Stuart Giraud, Humble Oil & Ref. Company | Houston |
| J. A. Germany, Independent | Dallas |
| Henry L. Gardner, Sentinel Oil Company | Los Angeles |
| Geo. S. Garrett, U. S. Steel Products Company | San Francisco |
| R. H. Garrison, Miley Oil Company | Los Angeles |
| Mrs. Geo. S. Gay, Marsh Gauge Role Company | Coronado, Calif. |
| C. E. Gerteis, White Stag Refining Company | Wood River, Ill. |
| Jas. H. Gilhuly, Youngstown Sheet & Tube Co. | San Francisco |
| Guy L. Goodwin, Pinal Dome Corporation | Los Angeles |
| C. E. Graff, Standard Oil Co. (N. J.) | New York |
| Travis L. Golay, Pres. Morland Oil Co. of Colo. | Denver |
| F. V. Gordon, Oceanic & Buena Vista Oil Cos. | Los Angeles |
| Rome E. Goodwin | Toledo, Ohio |
| E. F. Goggins, Dunn Mfg. Co. | Oxnard, Calif. |
| M. E. Garrison, Pan-American Petroleum Co. | Los Angeles |

| Name—Representing | Home Address |
|---|---|
| H. O. George, Midway Gas Company | Los Angeles |
| A. L. Guthrie, Gypsy Oil Company | Albuquerque, N. M. |
| F. A. Gillespi, | Tulsa |
| J. Geismar, The National Supply Company | Toledo, Ohio |
| C. R. Gallagher, C. R. Gallagher & Co. | Los Angeles |
| Frank P. Gittings, Pet. Security Const. Dept. | Los Angeles |
| S. A. Gray, J. E. Gray Oil Company | Bakersfield |
| W. H. Geis, Consolidated Royalty Oil Company | Casper |
| S. A. Guiberson, Jr., Guiberson Corp. | Los Angeles |
| E. E. Greve, Oil Well Supply Co. | Pittsburgh, Pa. |
| W. E. Gorder | Los Angeles |
| C. E. Graff, Standard Oil Co. (N. J.) | New York, N. Y. |
| J. C. Graves, Sales Mgr. Richfield Oil Company | Los Angeles |
| W. E. Green, The Oil Age | Los Angeles |
| Roy Guthrie, H. C. Smith Mfg. Co. | Whittier, Calif. |
| E. D. Garratt, Standard Oil Company | Los Angeles |
| Irving Gleason, Union Tank & Pipe Company | Los Angeles |
| W. P. Gage | Dallas |
| H. P. Grimm, Geo. F. Getty, Inc. | Los Angeles |
| J. S. G.epe, Jr., Standard Oil of Calif. | Montebello, Calif. |
| Hugh Grant, Julian Petroleum Corp. | Los Angeles |
| E. G. Gaylord, Pacific Oil Company | San Francisco |
| L. R. Guerra, Pan American Petroleum Company | Los Angeles |
| Bryce Gillespie, General Petroleum Corp. | Los Angeles |
| R. E. Gracey, General Petroleum Corp. | Los Angeles |
| Edward B. Gogerty, Columbian Steel Tank Company | Kansas City |
| Harry O. Glasser, Champlin Refining Company | Enid, Oklahoma |
| Chas. W. Girvin, Petroleum Rectify. Co. of Calif. | Los Angeles |
| C. D. Gard, Union Oil Company | Los Angeles |
| Wright W. Gary, General Petroleum Corp. | Los Angeles |
| V. F. Grace, General Petroleum Corp. | Los Angeles |
| D. H. Graham, Granam Supply Company | Long Beach, Calif. |
| John Grant, Grant Forge Shop | Los Angeles |
| J. H. Grimes, Holly Oil Company | Huntington Beach, Calif. |
| Gordon Gulley, Marland Oil Company | Ponca City |

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|---|---|
| T. A. Hays, Union Oil Co. of California | San Francisco |
| F. Hoving, Standard Seamless Tube Co. | Pittsburgh |
| Frederick N. Huber | Riverside |
| Palmer Hughes, Simms Oil Company | Dallas |
| S. B. Hunt, Standard Oil Co. of N. J. | New York |
| Dana Hogan, Petroleum Securities | Los Angeles |
| C. L. Henderson, Vickers Petroleum Co. | Witchita, Kan. |
| Charles K. Hewes, General Petroleum Corp. | Los Angeles |
| Erle P. Halliburton, Halliburton O. W. Cem. Co. | Duncan, Okla. |
| R. S. Haseltine, Guiberson Corp. | Dallas |
| L. V. Hull, Wichita Pipe Line Co. | Wichita Falls, Texas |
| C. D. Howard, Bessemer Gas Engine Co. | Grove City, Pa. |
| E. S. Holt, Utah Oil Ref. Co. | Salt Lake City |
| Robert Hutchinson, Associated Oil Co. | San Francisco |
| H. C. Hutchins, Ajax Oil Company | Buffalo, N. Y. |
| E. J. Henry, The Atlanic Refining Co. | Philadelphia |
| C. W. Horstmeier, Sinclair Bldg., | Tulsa |
| T. B. Hoffer, Hoffer Oil Company (Corp) | Fort Worth |
| C. C. Herndon, Skelly Oil Company, | Tulsa |
| Z. F. Harshton, Chm. Mfg. Sub-Com. on Belt | Chicago |
| Frank Hall, Boston-Pacific Oil Co. | San Francisco |
| Fred K. Haskell, Empire Pipe Line | Bartlesville |
| W. K. Hughes, Continental Supply Co. | St. Louis |
| H. J. Halle, Pres. Univ. Oil Prod. Co. | Chicago |
| R. C. Holmes, The Texas Company | New York City |
| F. F. Hill, Union Oil Company of Calif. | Los Angeles |
| Edwin Higgins, Sec. Cham. of Mines & Oil | Los Angeles |
| Dorsey Hager, Sunburst O. & G. Co., G. & H. | Seattle, Wash. |
| Floyd J. Holmes | Fort Worth |
| H. H. Hall, Standard Oil Company | San Francisco |
| Chas. H. Haupt, Standard Oil Co. (N. J.) | New York |
| W. K. Holmes, The Texas Company, | Tulsa |
| John T. Hackstaff, Oil Fields Service Co. | Los Angeles |
| D. D. Houghton | Los Angeles |
| H. E. Hoffer, Wilson Oil Tools Corp. | Los Angeles |
| J. H. Hudson | Ardmore, Okla. |
| W. S. Hawley, Big West Oil Company | Spokane |
| J. B. Hawley, Big West Oil Company | Spokane |
| F. T. Hopp, Skelly Oil Company | Tulsa |
| H. M. Harris, Lucey Mfg. Corp. | Chattanooga |
| John C. Howard, The Utah Oil Refining Company | Salt Lake City |
| R. R. Harris, Pittsburgh Steel Products Company | Pittsburgh |
| R. C. Hamaker, Humble Oil & Refining Co. | Houston |
| Wm. H. Henszey | Los Angeles |
| R. W. Hanna, Standard Oil Co. (Calif.) | San Francisco |
| H. B. Haney, Associated Oil Company | Los Angeles |
| J. D. Hardcastle, Spang Chafant Company | St. Louis |
| H. A. Harley, Pan-American P. & T. Co. | New York |
| Miss E. R. Head, Wall Street Journal | New York |
| F. S. Heath, The Pure Oil Company | Columbus, O. |
| Alf. G. Heggem, Heggem & Davis | Tulsa |
| J. J. Hern, Chanslor Canfield Oil Company | Los Angeles |
| J. L. Hisey, Lake View Oil & Refining Company | Los Angeles |
| Fred A. Huber, Western Machinery Company | Los Angeles |
| G. B. Hunter, Emlenton Refining Company | Emlenton, Pa. |
| Fred Hyer | Fort Worth |
| H. D. Hagadorn, Crown Central Petroleum Co. | Olean, N. Y. |
| W. H. Hall, Oil Ope ator | Aztec, N. M. |
| F. W. Hertel, Associated Oil Company | Ventura |
| C. H. Haupt, Standard Oil Co. N. J. | New York |
| A. M. Houser, Crane Company | Chicago |
| John J. Hopkins, Birch Oil Company | New York |
| Thos. S. Harrison | Denver |
| Roy Hoffman, Brenner Oil Company | Oklahoma City |
| Mrs. Roy Hoffman | Oklahoma City |
| Ralph A. Halloran, Standard Oil Co. of Calif. | San Francisco |
| F. B. Henderson, Associated Oil Company | San Francisco |
| H. N. Herrick, Standard Oil Co. of Calif. | San Francisco |
| E. C. Hoag, Union Pacific System | Omaha, Nebr. |

| Name—Representing | Home Address |
|---|---|
| Chas. E. Hathaway, Stanley Belting Corp. | Chicago |
| Joseph Hellen, Sanpac Company | Los Angeles |
| E. F. Hudson, Standard Oil Company | La Mirada, Calif |
| J. M. Hillman, Hillman-Cooney, Inc. | Los Angeles |
| S. B. Herndon, Herndon Oil Company | Los Angeles |
| C. F. Hansen, Standard Oil Company | El Segundo, Calif. |
| Daniel W. Hone, Associated Oil Company | San Francisco |
| John D. Hoff, Trumble & Hoff, | Eagle Rock, Calif. |
| J. C. Hawkins | El Dorado, Ark. |
| E. T. Hancock | Bucharest, Roumania |
| J. A. Herron | Los Angeles |
| A. R. Hinton, California Oil World | Los Angeles |
| W. S. Hawley, Big West Oil Company | Spokane, Wash. |
| W. W. Hampton, Hughes Tool Company | Los Angeles |
| E. A. Hanger, Signal Gasoline Company | Los Angeles |
| Harry M. Hope, Power Specialty Company | New York |
| M. J. Hoeslich | Seattle |
| John C. Howard, Utah Oil Refining Company | Salt Lake, Utah |
| F. H. Hillman, Standard Oil Co. of Calif. | San Francisco |
| C. C. Harshman, Standard Oil Company | El Segundo, Calif. |
| W. H. Hales, Standard Oil Company | El Segundo, Calif. |
| R. H. Hornidge, Union Oil Co. of Calif. | Los Angeles |
| Henry Hart | Los Angeles |
| J. T. Hurst, Consolidated Royalty | Greybull, Wyo. |
| W. W. Hays, Union Oil Co. of Calif | Los Angeles |
| George A. Howk, General Petroleum Corp. | Los Angeles |
| W. P. Hart, Hughes Tool Company | Los Angeles |
| L. G. Haskell, Standard Oil Company | Montebello, Calif. |
| John P. Herrick, N. Y. Oil Producers Ass'n. | Olean, N. Y. |
| H. W. Hill, Union Oil Company | Los Angeles |
| L. M. Hoff, Hughes Tool Company | Houston |
| W. F. Huff, California National Supply Company | Los Angeles |
| N. R. Hawkins, United Oil Company | Florence, Colo. |
| J. W. Hurley, Hurley Gasoline Company | Tulsa |
| D. A. Hurley, Hurley Gasoline Company | Tulsa |
| H. C. Hutchins, Ajax Oil Company | Buffalo |
| John Hale, Marland Oil Company | Ponca City |
| C. C. Harshman, S. O. Company | El Segundo, Calif. |
| A. L. Howell | Los Angeles |
| W. W. Heathman, Union Oil Company | Compton, Calif. |
| Fred A. Herr, Oil Reporter | Los Angeles |
| Chester Hess, Oil Reporter | Los Angeles |
| Wm. L. Hagenbaugh, Master Lubricating Company | Los Angeles |
| H. R. Hammett, Western Pipe & Steel Company | Bakersfield |
| Geo. H. Heitz, Associated Oil Co. | Huntington Beach |
| Frank W. Holmes | Lima, Ohio |
| E. D. Hanlon, Standard Oil Co. | Long Beach |
| C. C. Harshman, Standard Oil Company | El Segundo, Calif. |
| R. L. Hemingway, Southwestern Eng. Corp. | San Francisco |
| M. H. Houser, Union Oil Company | Los Angeles |
| J. W. Harasta, Pan American Pet. Company | Los Angeles |
| Lawrence C. Hampton, Union Oil Co. of Calif. | Long Beach |

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|---|---|
| W. M. Irish, Atlantic Refining Co. | Philadelphia |
| E. W. Isom, Sinclair Refining Company | New York |
| Wm. D. Inskeep, Smith Emery & Company | San Francisco |

J

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|---|---|
| H. G. James, American Oil Men's Association | Chicago |
| J. H. Jenkins, Tidal Oil Company | Fotr Worth |
| Col. J. O. Johnson, National Screw Thread Com. | Washington |
| J. V. Johnson, S. J. Johnson Company | Oakland, Calif. |
| P. C. Jones, The S. M. Jones Company | Toledo, Ohio |
| Peter C. Jurs, Bethlehem Shipbuilding Corp. | San Francisco |
| Paul R. Jones, Henry L. Doherty Company | New York |
| Chas. R. Johnson, Petroleum World | Los Angeles |
| Elmer A. Johnson, Federal Motor Truck Co. | Los Angeles |
| V. E. Jackson, Iowa Park Pro. & Ref. Co. | Wichita Falls |
| J. S. Johnson, Acme Petroleum Company | Dallas |
| W. S. James, Associated Oil Company | San Francisco |
| Roy B. Jones, Panhandle P. & R. Company | Wichita Falls |
| E. M. Johnson, East Coast Oil Company | Tuscon, Arizona |
| Hoyle Jones, Prest-Superior Tube Company | Tulsa |
| L. D. Jurs, Associated Oil Company | San Francisco |
| J. C. Johnson, Johnson Oil Burner Co. | San Francisco |
| Frank C. Jones, Guiberson Corporation | Houston |
| Joseph Jensen, Associated Oil Company | Los Angeles |
| G. B. Jenkinson, Jr., The Midwest Refining Company | Denver |
| Walter R. Jones, Johns-Manville, Inc., of Calif. | San Francisco |
| C. H. Jay, Pure Oil Company | Columbus, Ohio |
| L. H. Johnson, The Pennzoil Company | Los Angeles |
| J. F. Jeffries, Standard Oil Company | Los Angeles |
| G. Leigh-Jones, Pres. Shell Co. of California | San Francisco |
| J. E. Jenkins, Western Gas | Los Angeles |
| Wilhelm Jardh | Los Angeles |
| Francis H. Johnston, Hurley Gasoline Company | Tulsa |
| D. B. Johns, S. O. Co. of Calif. | La Habra |
| E. F. James, Shell Co. of Calif. | Los Angeles |
| Harry R. Johnson | Los Angeles |
| W. S. Johnson, Union Oil Co. of Calif. | Los Angeles |
| A. S. Jones, Associated Pipe Line Company | San Francisco |
| Carl C. Joys, Jr., A. O. Smith Corporation | Milwaukee |
| Floyd D. James, Union Oil Co. of Calif. | Los Angeles |
| E. H. Jones, Union Oil Co. of Calif. | Los Angeles |
| Albert J. Jones, Wilshire Oil Company | Los Angeles |
| Newton P. Jackson, Julian Petroleum Corp. | Los Angeles |

K

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|---|---|
| H. A. Kasselbaum, California Petroleum Corp. | Los Angeles |
| E. Klappenbach, Oil & Gas Journal | Chicago |
| T. L. Kirk, Standard Seamless Tube Co. | Pittsburgh |
| Arthur Knapp, The United Gas Impr. Co. | Philadelphia |
| C. R. Krause, Lee C. Moore Co. | Tulsa |
| F. A. Keller, Producer | Warren, Pa. |
| L. F. Kinston, U. S. Steel | Los Angeles |
| George E. Keith, Johnston Pet. Corp. | Camden, Ark. |
| Mrs. Kil Kelley, English Interests | Los Angeles |
| T. C. Kierulf, North Amer. Oil Cons. | San Francisco |
| Franklin R. Kenney, Marland Oil Co. of Calif. | San Francisco |
| C. H. Kountz, The Prairie Pipe Line Co. | Independence |
| Dana H. Kelsey, The Prairie Oil & Gas Co. | Independence |
| R. E. L. Knight, Jr., Amer. Exch. Nat'l Bank | Dallas |
| O. P. Keeney, Tide Water Oil Company | New York City |
| M. J. Kirwan, Ind. Terr. Illum. Oil Co. | Bartlesville |
| F. R. Kellogg, Premier Refining Company | Los Angeles |
| J. J. Kogan, Loomis Oil Well Cont'l Co. | Long Beach |
| A. S. Knisely | Los Angeles |
| H. C. Kimbrough, S. J. Candill Company | Tulsa |
| R. T. Keeton, United Oil Company | Los Angeles |
| John Knudsen | Los Angeles |
| Wm. E. Krupp, Baash-Ross Tool Company | Los Angeles |
| Ben A. Koehler, Sandoma Gasoline Company | Santa Fe Springs |
| F. E. Keith, The Co-Operative Company | Claremore, Okla. |
| J. J. Keely, Standard Oil Bldg. | Los Angeles |
| Richard C. Kerr, Standard Oil Company | Taft, Calif. |
| William A. Kirk, Export Refining Corp. | Los Angeles |
| Lester Keim, Oil Well Supply Company | Pittsburgh |
| Roy W. Kelly, Associated Oil Company | San Francisco |
| Lt. Col. R. Kil Kelly, J.P.K.C.B., British Interests | Dublin, Ireland |
| George B. Kerper, Jr., Pole Cat Oil Company | Powell, Wyo. |
| H. W. Knox, Texas Pac. Coal & Oil Company | Fort Worth |
| O. D. Knight, O. D. Knight Company | Long Beach, Calif. |
| M. G. Kerr, Union Oil Company | Los Angeles |
| C. W. King, Pacific Oil Company | Los Angeles |
| F. Kirkbride, Price Waterhouse Company | Los Angeles |
| J. G. Keeler, Associated Oil Company | San Francisco |
| John King, Corteg Oil Company | Tulsa |
| Ernst S. Kirk, Hercules Oil Company | Dallas |
| William Kleiniman, Hub Oil Company | Los Angeles |
| E. L. Karstedt, Continental Oil Company | Denver |
| H. N. Kuechler, Standard Oil Co. of Calif. | San Francisco |
| Kenneth V. King, Standard Oil Co. of Calif. | Richmond, Calif. |
| Jno. R. Keane, Pan American Pet. Co. | Los Angeles |
| S. G. Kennedy | Tulsa |
| J. H. Kahn, Stanley Billing Corp. | San Francisco |
| John H. Keane, Phillips Petroleum Co. | Bartlesville |
| J. J. Kennedy, National Tube Company | Pittsburgh |
| A. M. Kelley, Richfield Oil Company | Los Angeles |
| K. R. Kingsbury, Standard Oil Co. (Calif.) | San Francisco |

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| R. E. Lambertson, Sun Oil Company | Philadelphia |
| Charles H. Law, Imperial Oil Ltd. | Toronto, Ontario, Canada |
| Morrell Law, Barnsdall Refining Co. | Los Angeles |
| Robert Law, Jr., Barnsdall Corporation | New York City |
| A. E. Liddesdale, Spand & Co. | Butler, Pa. |
| A. T. Locke, Locke's Vetter Gasoline | Chicago |
| Geo. D. Locke, Barnsdall Refining Co. | Chicago |
| Wm. F. Lusch, Lusch & Holbrook | Pittsburgh |
| H. J. Lockhart, Parkersburg Rig & Reel Co. | Parkersburg, W. Va. |
| A. M. Lockhart, Dio Grande Oil Co. | El Paso |
| E. A. Lockhart, Rio Grande Oil Co. | Los Angeles |
| Lynn Lockhart, Rio Grande Oil Co. | Phoenix, Ariz. |
| H. L. Lockhart, Rio Grande Oil Co. | Colorado, Texas |
| R. S. Leonard, The Atlantic Refining Co. | Philadelphia |
| Frank V. Long, Petroleum World | Los Angeles |
| R. S. Lytle, Petroleum Securities Co. | Los Angeles |
| C. K. Longaker, The Texas Company | Houston |
| John Lauder, Shell Company of Calif. | San Francisco |
| W. G. Lane, General Electric Co. | Los Angeles |
| H. R. Longaker, Standard Oil Co. of Calif. | San Francisco |
| Norlet Lindrop (Geologist), Government Oil Trust & Gro. | Grosny, U. S. S. R. |
| B. W. Letcher, Standard Oil Co. (Calif.) | San Francisco |
| L. B. Little, Standard Oil Co. (Calif.) | Bakersfield |
| Frederic H. Lahee, Sun Oil Co. | Dallas |
| T. A. LaBelle, Pan American Pet. Company | Los Angeles |
| P. L. Lacombe, Associated Oil Company | San Francisco |
| Phil E. Laughlin | Fort Worth |
| Robert Law, Jr., Barnsdall Corp. | New York |
| R. Frost Liggett, Liggett Oil Company | Rosalia, Kan. |
| Wm. W. Little, National Petroleum News | Tulsa |
| F. B. Loomis, Standard Oil (Calif.) | San Francisco |
| Herman Layer, Pierce Petroleum Company | San Francisco |
| C. D. Lockwood, Oil & Gas Journal | Tulsa |
| T. F. Lydon, Roxana Petroleum Corp. | St. Louis |
| J. P. Laney, Mid Continent Oil & Gas Assn. | Dallas |
| Wallace Lee | Pico, Texas |
| Arthur B. Lawrence, F. S. Smithers & Company | New York |
| W. H. Laury, Axelson Machine Company | Huntington Park |
| Francis B. Longley, Dow Pump & Diesel Eng Co. | Alameda, Calif. |
| E. A. Landreth, Landreth Oil Corporation | Breckenridge, Texas |
| J. F. Lucey, Lucey Petroleum Company | Dallas |
| W. E. Lockhart, Producers & Refiners Corp. | Denver |
| Com. M. A. Libbey, U. S. N., Nat. Screw & Thread Com. | Washington |
| M. Louis, Standard Oil Co. of N. J. | New York |
| Dalton Lain, Oscar R. Howard Interests | Tulsa |
| R. H. Lacey, Lacey Manufacturing Company | Los Angeles |
| D. D. Long, Hughes Tool Company | Los Angeles |
| Edward A. Livingstone, Emsco Derrick & Equip. Co. | Los Angeles |
| John J. Larkin, Larkin Packer Company | St. Louis |
| Geo. W. Lane | Morgan Hill, Calif. |
| G. Legh-Jones, Shell Company of Calif. | San Francisco |
| Charles F. Lienesch, Union Oil Company | Los Angeles |
| Wallace Lee | Pecos, Texas |
| Irwin F. Landis, United States Navy | Los Angeles |
| Franck Laine, West. Elec. & Mfg. Company | San Francisco |
| W. R. Layne, B. Jackson Pump Company | Berkeley, Calif. |
| William C. Learmont, Standard Oil Company | Los Angeles |

| Name—Representing | Home Address |
|---|---|
| Charles C. Lyon, Hughes Tool Company | Taft, Calif. |
| Charles W. Lieb, Union Oil Co. of Calif. | Los Angeles |
| S. C. Lewis, Julian Pet. Corp. | Los Angeles |
| Homer R. Linn, American Radiator Company | Chicago |
| W. H. Lyne, Julian Pet. Corp. | Los Angeles |
| J. S. Lehmann, Wm. S. Barnickel & Co. | St. Louis |
| G. I. M. Lindsay, Union Oil Company of Calif. | Los Angeles |
| J. P. Landreth, Universal Pack. & Serv. Company | Chicago |
| Clifford W. Lord, Buck & Stoddard | Los Angeles |
| P. C. Lamb, U. S. Shipping Board | San Francisco |
| Wm. J. Luke, Pacific Oil Co. | San Francisco |
| C. R. Little, L. & B. Drilling Company | Los Angeles |
| G. G. Langan, Hill, Hubbell & Company | Tulsa |
| Dartt H. Lyford, Pacific Gasoline Company | Los Angeles |
| Chas. E. Lloyd, Pres., Pioneer Oil Corp. | Los Angeles |
| R. G. Lauer, Miocene Oil Company | San Francisco |
| E. G. Lenzner, E. F. White Mfg. Company | Chicago |
| P. E. Lekinger, The White Company | San Francisco |
| Harvey W. Lee, Union Oil Co. of Calif. | Wilmington, Calif. |
| O. Len Lane, Marland Oil Company | San Francisco |
| S. A. Lewis, Jameson Oil Company | Los Angeles |
| Arthur Lawrence | New York |
| T. W. Lake, Union Oil Company | Brea, Calif. |
| Charles L. Lake, Superior Oil Company | Garden Grove, Calif. |
| Chas. H. Lown, Imperial Oil, Ltd. | Toronto, Ontario |

**Mc**

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|---|---|
| H. K. McCann, The H. K. McCann Comapny | New York |
| John H. McNeice, McNeice & Nard | Long Beach |
| John A. McAteer, Amer. Oil Well Eng. Co. | Los Angeles |
| John McCune, Jr., Bessemer Gas Engine Co. | Grove City, Pa. |
| John F. McCormack, Division Taxation & Acc't'g. | Washington, D. C. |
| R. W. McIlvain, The Fuel Oil Company | Columbus, Ohio |
| A. M. McBurney, Crew Levick Company | Philadelphia |
| Ellsworth McGowan, Marland Oil Co. of Calif. | San Francisco |
| B. T. McNeil, Swiftsure Pet. Co. | Houston |
| Gene McIntyre, D. & B. Pump & Supply Co. | Dallas |
| B. C. McPherson, Sun Oil Company | Philadelphia |
| R. S. McFarland, Twin State Oil Company | Tulsa |
| A. F. McClintock, Reading Iron Co. | Reading, Pa. |
| Geo. W. McKnight, Standard Oil Co. (N. J.) | New York |
| W. L. McLain, General Pet. Corp. | Los Angeles |
| R. N. McMaster, Chanslor-Canfield Mid. O. Co. | Torrance, Calif. |
| Geo. W. McNear | San Francisco |
| J. H. McEvoy, Jr., J. H. McEvoy & Co. | Houston |
| E. F. McIntyre, Inter. Petroleum Exposition | Tulsa |
| A. C. McLaughlin, Associated Oil Company | San Francisco |
| G. W. McKnight, Standard Oil Co. of N. J. | New York |
| Jno. McFadyen, The Ohio Oil Company | Casper |
| A. A. McDonald, Hughes Tool Company | Los Angeles |
| D. M. McCargar, Wagner Electric Corp. | St. Louis |
| J. T. McCarthy, Jr., Hercules Supply Company | Dallas |
| P. E. McChesney, Eastern Texas Electric Co. | Beaumont, Texas |
| R. P. McLaughlin, Jones-McLaughlin, Inc. | Los Angeles |
| J. S. McDaniel, Cordage Institute | New York |
| Robert R. McLachlen, F. V. Gordon | Los Angeles |
| Geo. C. McMullen, Timken Roller Bearing Co. | Canton, Ohio |
| J. H. McDonald, Ind. Oil Prod. Agency | Bakersfield, Calif. |
| Alex W. McCoy, Marland Oil Company | Denver |
| J. R. McWilliams, Skelly Oil Company | Tulsa |
| H. H. McCall, Los Angeles Testing Lab. | Los Angeles |
| J. M. McElwain, Franklin Oil Works | Franklin, Pa. |
| John McPeak, Union Oil Co. of Calif. | Los Angeles |
| J. J. McNerney, The Fred G. Clark Co. | Cleveland |
| J. O. McFaddin, Marland Oil Company | Los Angeles |
| G. W. C. McLaren, Standard Oil Company | Los Angeles |
| Ross McCollum, Standard Oil Company | Los Angeles |
| Geo. N. McGarvey, Robinson Tool Company, Braden Co. | Tulsa |
| J. R. McKinnie, Marine Corporation | Los Angeles |
| L. R. McMaster, Standard Oil Company | Inglewood |
| J. J. McDonald, Main Belting Company | San Francisco |
| John B. McNab, Guiberson Corporation | Fillmore, Calif. |
| W. H. McFadden, Marland Oil Company | Ponca City, Okla. |
| C. R. McCollom, Union Oil Company | Los Angeles |
| J. O. McFaddin, Marland Oil Company | Los Angeles |
| W. H. McFaddin, Marland Oil Company | Ponca City |
| John S. McCarthy, Pioneer Oil Company | Los Angeles |
| W. F. McMurray, Marland Oil Company | San Francisco |

**M**

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|---|---|
| Hunter S. Marston, Pan-Am. Pet. & Transport | New York |
| R. T. Musser, Gen. Amer. Tank Car Corp. | Los Angeles |
| Nelson K. Moody, The Prairie Oil & Gas Co. | Independence |
| M. W. Mattison, Div. Taxation & Acc't'g. | New York |
| Miss Halcyon Moore, A. P. I. | Dallas, Texas |
| Paul M. Mueller, Pratt & Whitney Co. | Hartford, Conn. |
| F. V. Martinek, Standard Oil Co. of Indiana | Chicago |
| N. E. Moody, Shaffer Oil & Refining Co. | Cushing, Okla. |
| W. R. Martin, W. R. Martin | Dallas |
| L. L. Marcell, White Eagle O. & R. Co. | Kansas City |
| Stevens Manning, Pan-Amer. Western Pet. Co. | Wilmington, Calif. |
| Van H. Manning, Petroleum Securities Co. | Los Angeles |
| Alexander Milne, Jones & Laughlin Steel Corp. | Pittsburgh |
| Ray E. Miller, Petroleum Saftety Council | Tulsa |
| S. Messer, Jas. B. Berry's Sons Co. | Oil City, Pa. |
| Walter Miller, Marland Oil Company | Ponca City |
| H. C. Mulroy, Marland Refining Company | Ponca City |
| Carl E. Miller, James B. Berry's Sons Co. | Chicago |
| J. H. Markham, Jr. | Tulsa |
| R. A. Mitchell, R. & J. Dick Co., Inc. | Passaic, N. J. |
| Frank M. Mahan, Nat. Turnbuckle Derrick Co. | Tulsa |
| Floyd M. Mohler, Inter. Derrick & Equip Co. | Dallas |
| S. A. Megeath, Samoset Oil Company | New York |
| H. J. Morland, Oil Well Supply Co. | Fort Worth |

| Name—Representing | Home Address |
|---|---|
| C. A. Maguire, Northland Oil Company | Chicago |
| F. T. Manley, The Texas Company | Houston |
| Hallan N. Marsh, General Petroleum Corp. | Los Angeles |
| Wesley R. Mason, Amer. Car & Foundry Co. | Hollywood, Calif. |
| H. W. Maxfield, San Francisco & McKittrick | San Francisco |
| H. H. Maxon, Calif. Petroleum Exchange | Los Angeles |
| Harold Moorcroft | New York |
| U. C. Murcell, Associated Oil Company | Los Angeles |
| Miss Mary Olive Marshal, Price Oil Company | Oklahoma City |
| J. S. Mellon, Dunn Mfg. Company | Oxnard, Calif. |
| W. E. Moody, Shaffer Oil & Refining Co. | Cushing, Okla. |
| Walter Miller, Marland Oil Company | Ponca City |
| Otto Mautius | New York |
| R. E. Maynard, General Petroleum Corp. | Los Angeles |
| P. M. Miskell, Empire Refineries | Tulsa |
| Edgar C. Marston, Texas Pacific Coal & Oil Co. | Fort Worth |
| S. W. Mascho, Independent Torpedo Co. | Findlay, Ohio |
| Desaix B. Myers, Union Oil Co. | Los Angeles |
| J. T. Massey, Standard Oil Co. of N. J. | New York |
| M. J. McLaughlin, Magnolia Petroleum Co. | Dallas |
| Peter J. Murphy, Wall Street Journal | New York |
| C. Morris, Oil & Gas Journal | Tulsa |
| G. V. Martin, O'Donnell Interests | Long Beach, Calif. |
| Robert J. Miller, Robert J. Miller Co. | Houston |
| H. F. Miller, Standard Oil Co. of N. J. | Tulsa |
| F. O. Meyers | Los Angeles |
| R. S. Mill, Union Oil Co. of Calif. | Los Angeles |
| Harry I. Miller, Detroit Graphite Company | Chicago |
| Edw. L. Moorhead, Oscar R. Howard Interests | Tulsa |
| W. J. Murray, Union Oil Co. of Calif. | Los Angeles |
| A. P. Mann, Union Oil Co. of Calif. | Los Angeles |
| Ernest Marquardt | Casper |
| Wm. T. Morm, Alcorn Combustion Company | Los Angeles |
| C. A. Montgomery, Westinghouse E. & M. Co. | Bakersfield, Calif. |
| B. S. Minor, Regan Forge & Eng. Company | San Pedro, Calif. |
| H. C. Miller, Phillips Petroleum Company | Houston |
| J. V. MacDonald, Chain Belt Company | Milwaukee |
| F. L. Morris, Eight Oil Company | San Francisco |
| R. S. Miller, Sun Oil Company | Dallas |
| A. B. Mason, Union Oil Company of Calif. | Los Angeles |
| Fred W. Mayer, Standard Oil Company | El Segundo, Calif. |
| A. B. Macbeth, Midway Gas Company | Los Angeles |
| F. C. Morrison, Commins & Kean, Inc. | Los Angeles |
| A. W. Milford, Union Oil Co. of Calif. | Los Angeles |
| Wm. Moeller, Jr., Midway Gas Company | Los Angeles |
| A. C. Mattei, Honolulu Cons. Oil Company | San Francisco |
| Eugene R. Murray-Aaron, Hughes Tool Company | Los Angeles |
| W. G. Marks, John A. Roebling Sons Company | Los Angeles |
| S. P. Muller, Merchants Petroleum Company | Anaheim, Calif. |
| S. E. Morenbach | San Francisco |
| S. C. Maynard, Associated Supply Company | Coalinga |
| W. H. Morgan, Rio Grande Oil Company | El Paso |
| L. C. Mirtendorf, Standard Oil Company | Los Angeles |
| R. N. Mullin, Calumet Oil Company | El Paso |
| Mrs. Ellis S. Musser, Independent Lease Hound | Salt Lake City |
| J. W. Mason, Alaska Oil & Dev. Co. | Seattle |
| Earl H. Mathis, Pres., Producers Gasoline Company | Venice, Calif. |
| H. E. Moulton, Chanslor Canfield M. Oil Company | Torrance |
| B. A. Moeller, General Petroleum Corp. | Los Angeles |
| J. W. Minder, Baldwin Chain & Mfg. Company | Los Angeles |
| A. N. Mackenzie, Sun Oil Company | Los Angeles |
| B. F. Masten, Pacific Gasoline Company | Los Angeles |
| D. S. Mills, Standard Oil Company | Los Angeles |
| J. M. Mildren | Hollywood |
| Geo. Marland, Marland Oil Company | Ponca City |
| E. W. Marland, Marland Oil Company | Ponca City |

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| H. M. Nichols, The Atlantic Refining Co. | Philadelphia |
| W. V. Newlin, Jr., Jas. B. Berry's Sons Co. | Philadelphia |
| Neil C. Needham, General Pet. Corp. | Los Angeles |
| L. E. Nebergall, Titusville Forge Co. | Denver |
| Wm. M. Neckerman, Youngstown Sheet & Tube | Youngstown, O. |
| Underwood Nazro, Gulf Companies | Houston |
| L. V. Nicholas, National Pet. Marketers | Chicago |
| L. E. Norton, Standard Oil Co. of Calif. | San Francisco |
| E. J. Nickles, The Texas Company | Tulsa |
| P. R. Naylor, Continental Oil Company | Denver |
| H. M. Nichols, Atlantic Refining Company | Philadelphia |
| H. G. Naylor, The Midwest Refining Co. | Denver |
| A. R. Newcombe, Newcombe Oil Company | Kingston, N. Y. |

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| Earl Oliver | Ponca City |
| W. M. O'Connor, Atlantic Oil Producing Co. | Philadelphia |
| C. A. Olson, American Radiator Company | Buffalo |
| Thos. A. O'Donnell, Cal. Pet. | Los Angeles |
| W. W. Orcutt, Union Oil Co. of Calif. | Los Angeles |
| B. O'Connor, Calif. Pet. Corp. | Los Angeles |
| Clarence B. Osborne, Homestake Exploration Corp. | Los Angeles |
| G. G. Oberfell, Phillips Petroleum Co. | Bartlesville |
| C. E. Olmstead, Calif. Petroleum Corp. | Los Angeles |
| C. C. Osborn, Marland Oil Co. | Ponca City |
| P. H. O'Neil, Calif. Petroleum Corp. | Los Angeles |
| James Owen, Salt Creek Con. Oil Co. | Denver |
| C. E. Oliver, Marland Oil Company of Calif. | Los Angeles |
| G. F. Olsen, General Petroleum Corp. | Vernon, Calif. |
| Leonard W. Oryncki, The California Company | Colorado, Texas |
| W. L. Osborne, Hills McCanna Company | Chicago |

**P**

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|---|---|
| J. Edgar Pew, Sun Oil Company | Dallas |
| J. L. Pemberton, Pan-American Petroleum | Los Angeles |
| E. L. Peck, Empire Companies | Bartlesville |

| Name—Representing | Home Address |
|---|---|
| E. H. Porter, The Atlantic Refining Co. | Philadelphia |
| Joseph E. Pogue, Consulting Engineer | New York |
| R. T. Potts, Shell Co. of California | Los Angeles |
| W. C. Platt, National Petroleum News | Cleveland, Ohio |
| W. A. Peters, Jr., E. B. Badger & Sons Co. | Boston |
| Russell R. Palmer, Petroleum World | Los Angeles |
| Curry S. Prescott, Prescott Pump Co. | Menominee, Mich. |
| H. K. Penny, D & B Pump & Supply Co. | Dallas |
| Wallace E. Pratt, Humble Oil & Ref. Co. | Houston |
| L. H. Prichard, Anderson Prichard Oil Co. | Oklahoma City |
| H. O. Parker, Mathieson Alkali Works | New York |
| S. D. Proctor | Teague, Texas |
| P. H. Patchin, Standard Oil Co. of Calif. | San Francisco |
| E. E. Plumly, Magnolia Petroleum Company | Dallas |
| Linn K. Park, Portable Rotary Rig Company | Houston |
| R. W. Pack, Sun Oil Company | Beaumont, Texas |
| John M. Peat, Shell Co. of Calif. | Long Beach, Calif. |
| J. R. Penn, Texas Pacific Coal & Oil Co. | Fort Worth |
| Thos. H. Pike, Thos. H. Pike Co. | Los Angeles |
| Mrs. F. G. Prater, Pan American Pet. Co. | Los Angeles |
| B. L. Pillow, Standard Oil Co. of La. | Baton Rouge |
| H. L. Phillips, Sinclair Crude Oil Pur. Co. | Tulsa |
| Richardson Pratt, Standard Oil Co. of N. J. | New York |
| Edward Prizer, Vacuum Oil Company | New York |
| W. T. Parker | Wichita Falls |
| A. W. Peake, Midwest Refining Co. | Casper |
| R. M. Putman, Union Oil Co. of Calif. | Graham, Texas |
| H. W. Platenberg, Axelson Machine Co. | Tulsa |
| R. L. Peeler, Calif. Petroleum Corp. | Los Angeles |
| Paul Paine, Formax Oil Company | Beverly Hills, Calif. |
| A. G. Phelps, Standard Oil Co. of N. J. | New York |
| Chas. B. Peters, Peters Oil Corp. | Tulsa |
| A. J. Pollock, Miocene Oil Company | San Francisco |
| J. N. Pew, Jr., Sun Oil Company | Philadelphia |
| E. G. Palmer | Shreveport, La. |
| L. E. Phillips, Phillips Petroleum Co. | Bartlesville |
| John Perl, Chas. Parmelee | New York |
| F. A. Pielsticker, Skelly Oil Company | Eldorado, Kansas |
| Hollis P. Porter, Gypsy Oil Company | Tulsa |
| D. J. Peters, MacMillan Pet. Products | Los Angeles |
| Chas L. Parmelee | New York |
| T. W. Parkin, The Twin State Oil Company | Sapulpa, Okla. |
| Ira S. Pierce, General Petroleum Corp. | Los Angeles |
| J. W. Pauson, General Petroleum Corp. | San Francisco |
| A. A. Perkins, Perkins O. W. Cementing Company | Los Angeles |
| Eugene Power, Union Oil Co. of Calif. | Los Angeles |
| W. G. Phillips, Phillips & Milan | Chelsea, Okla. |
| Rudolf R. Pollak, Miocene Oil Company | Maricopa, Calif. |
| R. K. Paine, Standard Oil Company | San Francisco |
| George F. Prussing, Union Oil Company of Calif. | Los Angeles |
| Henry L. Payne | Los Angeles |
| W. W. Power, Superior Oil Company | Los Angeles |
| L. B. Prentice, Axelson Machine Company | Los Angeles |
| Chas. F. Pedrotta, Union Oil Co. of Calif. | Los Angeles |
| E. K. Potter | Los Angeles |

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| J. L. Quinn, Standard Oil Co. of Calif. | San Francisco |

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| Girard B. Rosenblatt, Westinghouse Elec. Mfg. Co. | San Francisco |
| Harry S. Roll, Marland Oil Co. of Colorado | Denver |
| L. Restrepo, Leonard Oil Dev. Co. | Los Angeles |
| M. F. Roberts, The Atlantic Refining Co. | Philadelphia |
| C. E. Roth | Independence, Kansas |
| J. D. Reardon, Union Oil Co. of Calif. | Los Angeles |
| J. H. Romer, Prudential Oil Corporation | New York |
| F. E. Rice, Phillips Petroleum Co. | Bartlesville |
| W. A. Rossen, Sun Oil Company | Dallas |
| C. M. Root, Root and Rhodes | Eastland, Texas |
| C. B. Richardson, Western Exploration Co. | Casper |
| Spencer W. Robinson, The Oil Weekly | Houston |
| Ralph J. Reed, Union Oil Co. of California | Los Angeles |
| Harry M. Runkle, Inter. Derrick & Equip. Co. | Columbus, Ohio |
| Chas. G. Runkle, Inter. Derrick & Equip. Co. | Columbus, Ohio |
| A. E. Raine, Wilson Oil Tools Corp. | Tulsa |
| W. A. Raine, Union Oil Co. of Calif. | Wilmington, Calif. |
| Geo. L. Ratcliffe, General Petroleum Corp. | Los Angeles |
| H. M. Rinehart, Star Drilling Machine Co. | Long Beach, Calif. |
| Leland L. Rebber, Union Oil Co. of Calif. | Wilmington, Calif. |
| Irvin Reed, Stanley Belting | San Francisco |
| J. W. Reed. The C. & G. Cooper Company | Mt. Vernon, Ohio |
| I. N. Randall, Richfield & Richlube | San Francisco |
| E. B. Reeser, Barnsdall Corp. | New York |
| G. A. Reichard, The Worthington Co., Inc. | Los Angeles |
| John Reid, Joseph Reid Gas Engine Co. | Oil City, Pa. |
| C. F. Roeser, Roeser & Pendleton | Breckenridge, Texas |
| Gerald A. Rogers, F. V. Gordon | Los Angeles |
| R. M. Roome, Standard Oil Co. N. J. | Los Angeles |
| Joseph M. Regan, Regan Forge & Eng. Co. | San Pedro, Calif. |
| M. L. Requa | San Francisco |
| J. C. Rohlfs, Standard Oil Co. of Calif. | San Francisco |
| A. S. Russell, Standard Oil Co. of Calif. | Richmond, Calif. |
| C. E. Reed, Bridgeport Machine Co. | Wichita, Kans. |
| Matthew F. Roberts, Atlantic Refining Co. | Philadelphia |
| H. W. Roe, MidContinent Pet. Corp. | Tulsa |
| Miss Dorothy Robinson | San Pedro, Calif. |
| Chas. F. Roeser, Roeser & Pendleton | Breckenridge, Texas |
| A. H. Riney, Phillips Petroleum Co. | Bartlesville, Okla. |
| O. D. Robinson, Republic Oil Co. | Pittsburgh |
| H. H. Roberts, Standard Oil of Calif. | Los Angeles |
| L. B. Riddle, Shaffer Oil & Refining Co. | Tulsa |

| Name—Representing | Home Address |
|---|---|
| J. Ben Ross | Fort Worth |
| Harlod B. Reed, Pan. Amer. Petr. & Trspt. Co. | New York |
| Rufus J. Pilcher, United-Richfield Companies | Los Angeles |
| Lisle W. Reinhold, Jones-Thorne & Co., Inc. | Los Angeles |
| J. C. Rector, Union Oil Company | Sante Fe Springs |
| G. L. Ross, Pacific Gasoline Company | Talft, Calif. |
| R. R. Rosier, The Akin Gasoline Company | Tulsa |
| R. L. Rowley, Johnson and Higgins | San Francisco |
| George W. H. Reid, Petroleum Journalist | Anaheim, Calif. |
| Geo. W. Reid, Hodgeman Lease Company | Delano, Calif. |
| Hobart W. Rude, Kleiber Truck Company | Los Angeles |
| C. W. Rehfuss, Standard Oil Companny | El Segundo, Calif. |
| H. J. Rath, Gasoline Recovery Corp. | Charleston, West Va. |
| Ervin E. Rollins, Pacific Gasoline Company | Taft, Calif. |
| H. H. Rousseau, U. S. Navy | Washington |
| A. F. Rose, Tidal Oil Company | Tulsa |
| Kenyon L. Reynolds, Pacific Gasoline Company | Los Angeles |
| Hans C. Ross, Baash-Ross Tool Company | Los Angeles |
| Thomas Russell, S. F. Johnson Company | Oakland, Calif. |
| Harold B. Reed, Pan Amer. Petr. & Trans. Co. | Los Angeles |
| F. C. Reybury, Wm. S. Barnickel & Company | St. Louis |
| Alexander Robertson, Robertson & Co., P. L. Con. | Los Angeles |
| J. J. Richart, Joy Richart Perf. Ser. | Whittier |
| N. A. Rousselot, Milham Exploration Company | Los Angeles |
| R. H. Ross | Los Angeles |
| Louis Roger, Superior Oil Company | Pasadena |
| Wm. J. Rogers | Los Angeles |
| A. C. Rubel, Union Oil Co. of Calif. | Compton |

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| C. B. Sanders, Crane Company | Tulsa |
| H. B. Simcox, Continental Oil Company | Denver |
| E. W. Sinclair, Sinclair Consolidated Oil | New York |
| H. L. Shoemaker, Standard Oil Co. of N. J. | New York |
| Carl Shapiro, Northern Oil Company | Virginia, Minn. |
| Guy I. Sweney, Sweney Gasoline & Oil Company | Peoria, Ill. |
| J. P. Shannon, Snowden & McSweeney Co. | New York |
| V. C. Sheehan, California Dispatch Line | San Francisco |
| Harry L. Shoemaker, Standard Oil Co. N. J. | New York |
| E. C. Sicardi, Union Tank Car Company | New York |
| J. S. Sidwell, Prairie Oil & Gas Company | Tulsa |
| Wm. Simpson, The California Company | Colorado, Texas |
| W. E. Smith, Standard Oil Co. Kentucky | Louisville, Ky. |
| D. C. Stewart, Magnolia Petroleum Co. | Dallas, Texas |
| J. B. Stoddard, Stoddard Oil Company | New York |
| C. W. Stratford, Associated Oil Company | San Francisco |
| John R. Suman, Rio Bravo Oil Company | Houston |
| L. N. Slater, Western Pipe & Steel Company | Los Angeles |
| E. M. Smith, Marion Machine & Foundry | Marion, Ind. |
| H. M. Stalcup, Skelly Oil Company | Tulsa |
| E. C. Schmidt, California World | Los Angeles |
| E. G. Senbert, Standard Oil Co. of Indiana | Chicago |
| Robert W. Stewart, Standard Oil Co. of Indiana | Chicago |
| W. L. Stewart, Jr., Union Oil Company | San Pedro, Calif. |
| J. V. Smith, Col. Nat. Supply Company | San Francisco |
| R. N. Slingerland, Standard Oil Company | San Francisco |
| Robt. W. Savidge, U. P. R. R. | Omaha, Nebr. |
| F. P. Summers, Standard Oil Co. of California | San Francisco |
| F. R. Sheller, Julian Pet. Corp. | Los Angeles |
| C. Storey, Henry L. Doherty & Company | New York |
| R. W. Skinner, Skinner Bros. Belting Company | Tulsa |
| C. S. Sollars, C. S. Sollars | Great Falls, Mont. |
| Jack M. Sickler, Union Oil Co. of California | Pasadena, Calif. |
| D. T. Schultz, New England Oil Ref. Co. | Boston |
| Albert A. Scheg, Oil Bulletin | Los Angeles |
| H. G. Schneider, C. F. Braun & Company | Alhambra, Calif. |
| Jno. C. Sooker, Pennsylvania Independent | Bradford, Pa. |
| L. P. Stockman, The Oil & Gas Journal | Tulsa |
| W. J. Sutherland, Standard Oil of N. Y. | New York |
| Thedore Sutter, Baker Casing Shoe Co. | Huntington Park, Calif. |
| T. E. Swigart, Shell Co. of California | Los Angeles |
| F. T. Schwarzenbek, Jones-McLaughlin Inc. | Los Angeles |
| Wendell M. Smith, Miley Oil Co. | Los Angeles |
| Chas. L. Suhr, The Pennzoil Company | Oil City, Pa. |
| R. J. Sharpe, Gen. Amer. Tank Car Company | Tulsa |
| R. W. Sherman, Sentinel Oil Company | Los Angeles |
| S. R. Shoup, Joseph Reid Gas Engine Co. | Oil City, Pa. |
| Pat Shouvlin, Superior Gas Engine Co. | Springfield, Ohio |
| H. J. Smith | Los Angeles |
| E. K. Soper | Palo Alto, Calif. |
| F. W. Speller, National Tube Company | Pittsburgh |
| Walter Stalder, Walter Stalder, Petroleum Geologist | San Francisco |
| H. F. Stewart | Los Angeles |
| Charles L. Stokes, Patent Atty. Union Oil Company | Los Angeles |
| H. R. Straight, Empire Gas & Fuel Co. | Bartlesville |
| Andrew M. Strong, Pacific Oil Tool Co. | Los Angeles |
| Miss Josephine Straukamp, Oil Bulletin | Los Angeles |
| Miss Justine Scheg, Oil Bulletin | Cincinnati, Ohio |
| Ben L. Stroud, National Tube Co. | Los Angeles |
| G. A. Spang, Spang & Company | Butler, Pa. |
| E. O. Sanguinet, Wm. S. Barnickel & Co. | St. Louis |
| W. M. Schaufelberger, Pacific Gasoline Company | Taft, Calif. |
| N. K. Smith, Dunn Mfg. Co. | Oxnard, Calif. |
| E. R. Schaeffer, Johns-Manville, Inc. | New York |
| O. H. Schoenvald, Wentz Oil Corp | Ponca City |
| C. H. Sherman | Fort Collins, Colo. |
| W. W. Splane, Mahutska Oil Company | Oil City, Pa. |
| J. M. Sands, Phillips Petroleum Company | Bartlesville, Okla. |
| Lewis B. Scott | Eureka, Kansas |
| W. H. Steele, Calif. Nat. Supply Co. | Bakersfield, Calif. |
| R. M. Sands, Pet. Securities Company | Los Angeles |
| C. W. Smith, Pet. Securities Company | Los Angeles |

| Name—Representing | Home Address |
|---|---|
| Arthur F. Spengler, Spengler Core Drilling Co. | Los Angeles |
| C. C. Sharpenberg, Standard Oil of Calif. | Bakersfield, Calif. |
| C. O. Scholder, Standard Oil of La. | New Orleans |
| Leland V. Sanford, Sinclair Cons. Oil Corp | New York |
| A. W. Schram, Standard Oil of N. J. | New York |
| E. P. Salisbury, Standard Oil of N. J. | New York |
| John F. Shanley | San Diego, Calif. |
| E. J. Sadler, Standard Oil of N. J. | New York |
| Roy Somers, Petroleum Equipment Co. | Los Angeles |
| John R. Simpson, Sinclair Cons. Oil Corp. | New York |
| C. G. Sheffield, Standard Oil of N. J. | New York |
| Eugene C. Saul, Central Tube Co. | San Francisco |
| Emerson Spear, Pacific Wire Rope Co. | Los Angeles |
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| J. E. Swindler, Frick-Reid Supply Co. | Tulsa |
| Warren A. Sincheimer, Henry L. Doherty & Co. | New York |
| B. H. Stephens, Magnolia Petroleum Co. | Dallas |
| L. P. St. Clair, Union Oil Co. of Calif. | Los Angeles |
| Thos. G. Stitt, Pittsburgh Steel Prod. Co. | Monessen, Pa. |
| P. F. Shannon, Colorado School of Mines | Golden, Colo. |
| T. K. Sloan, Pacific Gasoline Company | Taft, Calif. |
| A. E. Smothers, Standard Oil Company | Los Angeles |
| Samuel W. Selfridge, Standard Oil Co. of Calif. | Los Angeles |
| Wm. Starksen, Sentinel Oil Company | Los Angeles |
| F. E. Sette, Sette Oil Faucets | Burlington, Wis. |
| W. J. Sheehan, W. J. S. Oil, Tool & Mach. | Santa Paula, Calif. |
| Morgan L. Sweeney, Union Tank & Pipe Co. | Los Angeles |
| J. R. Scanlin, California Petroleum Corp | Los Angeles |
| Henry H. Schmalfeld, Kleiber Motor Truck Co. | Los Angeles |
| M. D. Schatzman, West Coast Refining Company | Los Angeles |
| Nevin R. Shade, General Petroleum Corp. | Los Angeles |
| Charles H. Sheldon, Boner and Sheldon | Los Angeles |
| H. C. Smith, H. C. Smith Mfg. Company | Whittier, Calif. |
| W. L. Stewart, Union Oil Co. of Calif. | Los Angeles |
| Charles W. Sints, Sentinel Oil Company | Torrance, Calif. |
| Homer J. Sharp, Union Oil Co. of Calif. | Los Angeles |
| John H. Suter, Western Machinery Corp. | Los Angeles |
| W. D. Stewart, California Petroleum Corp. | Los Angeles |
| Robert E. Slawson, The Oil Well Supply Company | Los Angeles |
| W. D. Shaffer, Shaffer Tool Works | Brea, Calif. |
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| Donald E. Silcot, Standard Oil Co. of Calif. | Whittier |
| A. B. Steen, The Texas Company | Houston |
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| Jas. P. Sweeney, Miocene Oil Company | San Francisco |
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| Walter H. Soderberg | Los Angeles |
| C. O. Sprenger, Journal of Com. of N. Y. | Los Angeles |
| Harry F. Smith, Hurley Gasoline Company | Tulsa |
| Wm. H. Strang, Prior Con. U., Bu. Mines | Laguna Beach, Calif. |

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| W. C. Trout, Lufkin Foundry & Machine Co. | Lufkin, Texas |
| C. E. Townsend, Sun Oil Company | Philadelphia |
| W. N. Thayer, Nat. Pet. Equipment Corporation | Los Angeles |
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| H. G. Tallerday, Western Pipe & Steel Company | San Francisco |
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| Jas. Turnbull, Nickel Plate Road | Los Angeles |
| E. I. Thompson, Northwest Company | Denver |
| George M. Turner, Pomona College, | Claremont, Calif. |
| C. N. Turner, Turner Pet. Co., Inc. | Los Angeles |
| J. Elmer Thomas | Fort Worth |
| F. S. Thompson, Standard Tank Car Company | Tulsa |
| L. E. Thomas, Reading Iron Company | Reading, Pa. |
| H. G. Texter, Standard Seamless Tube Co. | Tulsa |
| Paul H. Talbert, Hughes Tool Company | Los Angeles |
| L. G. Trembly, Axelson Machine Company | Los Angeles |
| W. H. Theobald, Fred G. Clark Company | Cleveland, Ohio |
| H. G. Tanler, Associated Oil Company | San Francisco |
| Lafe Todd, Union Oil Co. of Calif. | San Luis Obispo |
| C. S. Thomas, C. S. Thomas Company | Los Angeles |
| E. P. Turner, Pacific Gasoline Company | Taft, Calif. |
| Paul Truesdell, Nat. Petroleum News | Cleveland |
| H. G. Texter, Standard Seamless Tube Co. | Tulsa |
| Vernon Taylor, Marland Oil Company | New York |
| J. D. Thomson, Premier Oil Company | Los Angeles |
| Lincoln Taber | Duncan, Okla. |
| John C. Tarr, Tarr & McComb Corp. | Los Angeles |
| L. A. Taylor, Sharp Spec. Co. of Calif. | San Francisco |

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| Lester C. Uren, University of California | Berkeley, Calif. |

V

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| W. L. Valentine, Fullerton Oil Company | South Pasadena, Calif. |
| J. W. Van Dyke, Atlantic Refining Company | Philadelphia |
| W. A. J. M. Van der Gracht, Marland Oil Co. | Ponca City |
| J. A. Vickers, Vickers Petroleum Co. | Wichita, Kansas |
| K. E. Van Kuran, Westinghouse Electric Co. | Los Angeles |
| C. J. van Bilua, Export Refining Corporation | Los Angeles |

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| R. E. Vivian, K. C. U. H. S. & Jr. College | Bakersfield, Calif. |
| C. O. Van Valer, Pan Amer. Pet. Company | Los Angeles |

W

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| E. T. Wilson, Continental Oil Company | Denver |
| J. E. Winters, Winters & Harwood | Wichita Falls |
| H. C. Weiss, Humble Oil & Refining Co. | Houston |
| George F. Winters, Phillips Petroleum Corp. | Bartlesville |
| W. E. Watson, Youngstown Sheet & Tube Co. | Youngstown, O. |
| J. Cooke Wilson, The Wilson Broach Company | Beaumont, Texas |
| F. D. Williams, National Transit Company | Oil City, Pa. |
| L. J. Whitney, Perkins Oil Well Cementing Co. | Los Angeles |
| Judson C. Welliver, A. P. I. | New York |
| E. H. Williams, National Supply Company | Carnegie, Pa. |
| Ira G. Wetherill, The National Supply Company | Independence, Kans. |
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| Richard A. Wotowitch, Henry L. Doherty Company | New York |
| Lacey Walker, A. P. I. | New York |
| R. L. Welch, A. P. I. | New York |
| L. C. Welch, Standard Oil Co. of Indiana | Chicago |
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| Arthur E. Wallace, Hoyt S. Gale | Los Angeles |
| Fred S. Walker | Long Beach, Calif. |
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| Arthur Wickstraw, The United Oil Co. | Los Angeles |
| John M. Wilson, The National Supply Co. | Pittsburgh |
| Donald Winston, Great Basin Oil Company | Holbrook, Ariz. |
| W. R. Wardner, Boston Petroleum Co. | Bakersfield, Calif. |
| G. T. Wofford, Wofford Oil Company | Birmingham, Ala. |
| Donald Weir, Jefferson Union Company | Lexington, Mass. |
| W. K. Whiteford, Barnsdall Oil Company | Los Angeles |
| N. W. Wickersham, Chan. Can. Midway Oil Co. | Los Angeles |
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| Fred L. White, Richfield Oil Company | Los Angeles |
| Earl W. Wagy, Standard Oil of California | San Francisco |
| Frederick Webb, Pennsylvania R. R. | Los Angeles |
| J. E. Williamson, Mack Trucks | |
| E. Whitehead, Associated Oil Company | San Francisco |
| J. W. Weir, Ventura Refining Company | Fillmore, Calif. |
| G. C. Woodruff, Roxana Petroleum Corp. | St. Louis |
| Paul Wagner, National Petroleum News | Houston |
| M. F. Waters, Smith Separator Co. | Tulsa |
| G. O. Wilson, Standard Oil of Calif. | San Francisco |
| A. K. Whitelaw, Standard Oil Co. of Ky | Louisville |
| O. Weaver, Barnsdall Oil Co. of Calif. | Los Angeles |
| D. D. Wertzberger, Wertzberger Derrick Co. | Tulsa |
| Joseph M. Weaver, States Oil Corp. | Eastland, Texas |
| Billy Walker, Brooks Eng. Corp. | Beaumont, Texas |
| L. H. Wentz | Ponca City |
| R. A. Wilson, The Guiberson Corp. | Dallas |
| C. D. Watson, The Carter Oil Co. | Tulsa |
| Van Court Warren | Los Angeles |
| J. Watterson, Standard Oil Co. of Ohio | Cleveland |
| H. T. Watterson, Standard Oil Co. of Ohio | Cleveland |
| A. L. Weil, General Petroleum Co. | San Francisco |
| Fred J. Wolfe, Imperial Oil Co., Ltd. | Toronto, Ont., Canada |
| E. C. R. Weisgerber, Petroleum Appliance Co. | Los Angeles |
| Chas. R. Weiss, Link-Belt Company | Indianapolis, Ind. |
| H. C. Weiss, Humble Oil & Ref. Co. | Houston |
| Harry J. Walker, Andrews Steel Company | Tulsa |
| H. W. Westsmith, Editor Oil Bulletin | Los Angeles |
| J. C. Wright, Spengler Core Drilling Company | Los Angeles |
| Francis E. Wilkinson, Clark Cracking Process | Alhambra, Calif. |
| W. C. Whaley, Barnsdall Oil Company | Los Angeles |
| H. H. Welsh, Lakeport Petroleum Company | Fresno |
| D. M. Wallace, Wiley Oil Company | Los Angeles |
| P. S. Williams, Standard Oil Company | San Francisco |
| Charles E. Woods, Union Oil Company | Maricopa |
| H. S. Woodruff, Quake City Tank Line, Inc. | St. Louis |
| Harrison R. Ward, California Petroleum Corp. | Los Angeles |
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| J. S. Wells, Ken. Sunset Oil Company | Maricopa, Calif. |
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| J. E. Wallis, Yorba Oil Company | Los Angeles |
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| Jack E. Wells, Pacific Oil Company | Los Angeles |
| J. Stuart Watson | Wilmington, Calif. |
| R. C. Wheeler, General Pet. Company | Taft, Calif. |
| Fay L. Wright, Superior Oil Company | Los Angeles |

Y

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| Walter K. Yott, David C. Reid Inc. | New York City |
| A. E. Young, Associated Oil Company | San Francisco |
| Carl A. Young, A. P. I. | Dallas |
| B. M. Youngken, Union Tool Company | Torrance, Calif. |
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| Trell W. Yocum, A. P. I. | New York |
| Leslie H. Young, Union Oil Company | Los Angeles |
| Roy W. Young, Pan American Pet. Company | Long Beach |
| D. H. Young, Amer. Manganese Steel Company | Chicago |
| Robt. A. Young, Marion Machine Foundry Sup. Co. | Salt Creek, Wyo. |

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| G. D. Zeh, Associated Oil Company | San Francisco |
| R. E. Zint, H. C. Smith Mfg. Company | Whittier, Calif. |
| C. A. Zimmerman, East Ohio Gas | Cleveland |

# Nine Deep Tests Near Completion In North Louisiana

## Urania field production increased by three new wells

Shreveport, La.—Nine deep wells in the Caddo and Cotton Valley districts of Louisiana are nearing completion or approaching critical depths. All of these wells are favorably located with reference to structure, and all are in close proximity to oil or gas production from newly-discovered deep sands. Accordingly, the next fortnight or so may bring forth important developments in this territory.

It is said that a shot will be discharged some time this week at a depth of from 4300 to 4385 feet in the Davis deep test drilled by the Palmer Corporation in section 23-21-10 for joint account with other producers in the Cotton Valley field. The hole has been plugged back from a total depth of more than 4600 feet. The Ohio Oil Company is expected to resume drilling soon after having cemented eight-inch casing at 3508 feet in its Cox No. 1, in section 23-21-10. The Ohio Company is drilling at 4030 feet in its Hodges No. 1, also located in section 23. The Humble Oil & Refining Company's drilling crew is engaged on a fishing job at 4036 feet in its Cox deep test, in section 22 of the same township. The Fortuna Oil Company is fishing at 4073 feet in its Bible No. 1, a wildcat located in section 8-20-9, a few miles southeast of the Cotton Valley field.

The Fortuna Oil Company is moving in cable tools to complete its Levee Board deep test, in section 8-20-15, about a mile and a half or two miles east of Oil City. A string of four-inch casing has been cemented at a depth of 4003 feet. The Dixie Oil Company has also set four-inch casing at 3729 feet in its Jolley deep test, in section 27-22-15, of the Pine Island District, which may be drilled in and tested soon. Drilling is still in progress at a depth of 3275 feet in the Dixie Company's Noel B-2, located in section 13-21-15, near the deep sand discovery wells. The Ohio Oil Company is coring at 3760 feet and drilling at 3515 feet in its Ardis No. 1 and E. K. Smith No. 18, located in sections 1 and 12 respectively, of the same township in which the Dixie's producing wells are located.

The Gulf Refining Company is drilling below 5910 feet in its Williams deep test, in section 31-13-11, of the Naborton district, in De Soto Parish.

The Triangle Drilling Company and J. Y. Snyder, of Shreveport, have resumed drilling operations in their Keen wildcat, in section 7-19-5 of the Sugar Creek community of Claiborne Parish. This well is now logged at 2835 feet in depth. Evans and others are drilling at 2510 feet in their Boatner wildcat, in section 10 of the same township.

The Urania District, Louisiana's newest oil field, accounted for three very good wells last week, and this new production served to raise the field's daily average to approximately 1170 barrels. The Natural Gas & Fuel Corporation's No. 2 Tullos, which was brought in early last week, has increased its flow to more than 350 barrels per day, of which 95 per cent is oil and five per cent is sand. This well, which is located near the town of Tullos and in the northeast corner of the northwest quarter of the southwest quarter of section 25-10-1e, was drilled to a total depth of 1540 feet and then plugged back to test four feet of oil sand at 1509 to 1513 feet. O. W. Clarke brought in two very good wells. His Miles No. 1, located in section 25-10-1e, is flowing at the rate of 200 barrels per day, and Tullos No. 1, located in section 23 of the same township, is rated as a 100-barrel well.

According to latest reports, the production of the field now averages approximately as follows:

| Owner and Well— | Production |
|---|---|
| Ayers et al's Urania Lumber Co. 1 | *60 |
| Alexandria-Urania Oil Co.'s Urania Lumber Co. 1 | †25 |
| Beckman et al's Urania Lumber Co. 2 | *35 |
| Urania Lumber Co. 3 | †150 |
| O. W. Clarke's Tullos 1 | †100 |
| Miles 1 | †200 |
| Keen & Woolf's Urania Lumber Co. 1 | †10 |
| Urania Lumber Co. 2 | †50 |
| Louisiana Oil Ref. Corp.'s Tremont Lumber Co. 1 | *30 |
| Love et al's Doty 1 | †30 |
| Nat. Gas & Fuel Corp.'s Urania Lumber Co. 1 | †35 |
| Tullos 2 | †350 |
| Urania Pet. Co.'s Urania Lumber Co. 8 | *20 |
| Urania Lumber Co. 9 | *30 |
| Zeigen et al's Urania Lumber Co. 1 | †5 |
| Urania Lumber Co. 2 | *20 |
| King 1 | †20 |
| Total, 17 wells | 1170 |

†Flowing; *Pumping.

The Louisiana Oil Refining Corporation closed a trade last week whereby it acquired from the Tremont Lumber Company a lease on an additional block of 320 acres in sections 30-10n-2e, all within the proven area. C. C. Hummer, drilling superintendent, states that drilling operations will be started at once on five wells to be located on this and other newly-acquired properties in and near the Tullos townsite.

# El Dorado Extension Most Promising Arkansas Area

El Dorado, Ark.—Mose Garrett and others are drilling into the Nacatoch sand at around 1475 feet in their Thompson No. 1, located in section 22-15-19, near the Buffalo Oil Company's Nacatoch-sand discovery well about two miles east of the Stephens field, in Ouachita County. The discovery well about two miles east of the though it is still flowing about 50 barrels of oil and considerable quantities of gas and salt water through two small chokes. Gossett and associates are said to have encountered the sand somewhat higher, structurally, than in the discovery well.

The Arkansas Fuel Oil Company is testing in both of its wells near Bradley, in La Fayette County. Red River Lands No. 1, located in section 18-19-24, is being swabbed at a depth of 2790 feet. It is said to be showing about 95 per cent salt water and 5 per cent oil. Allen No. 2 located in section 19 of the same township, is being bailed to test about six inches of sand through a caprock logged at 2793 feet.

It has been said that the territory in township 17-16, Union County, in the vicinity of the Keisker well which recently extended the old El Dorado field a few miles northwest, is the most promising area in the state now, if exception is made of the deep-sand possibilities of the Smackover field. Rovenger et al's Dumas well, located in section 9 of this township, is flowing through two-inch tubing from a depth of 2078 feet, and is said to be making around 45 barrels of oil per day. J. D. Reynolds and others are preparing to build a pumping rig on their Dumas No. 1, in section 15, which is standing with 250 feet of light oil in the hole at a total depth of 2160 feet. Owen et al have bailed dry, following a shot at 2141 feet, in their Porter No. 1, located in section 4. New wells have been started by Gaho et al, in section 11: J. D. Reynolds, in section 15; and by Rovenger et al and the Simms Oil Company in section 9, of the same township.

Announcement has been made that the Missouri-Pacific Railway Company will start construction work at once on a spur track to extend from Griffin, in the Smackover field, into the Lisbon area, in which the above named wells are located.

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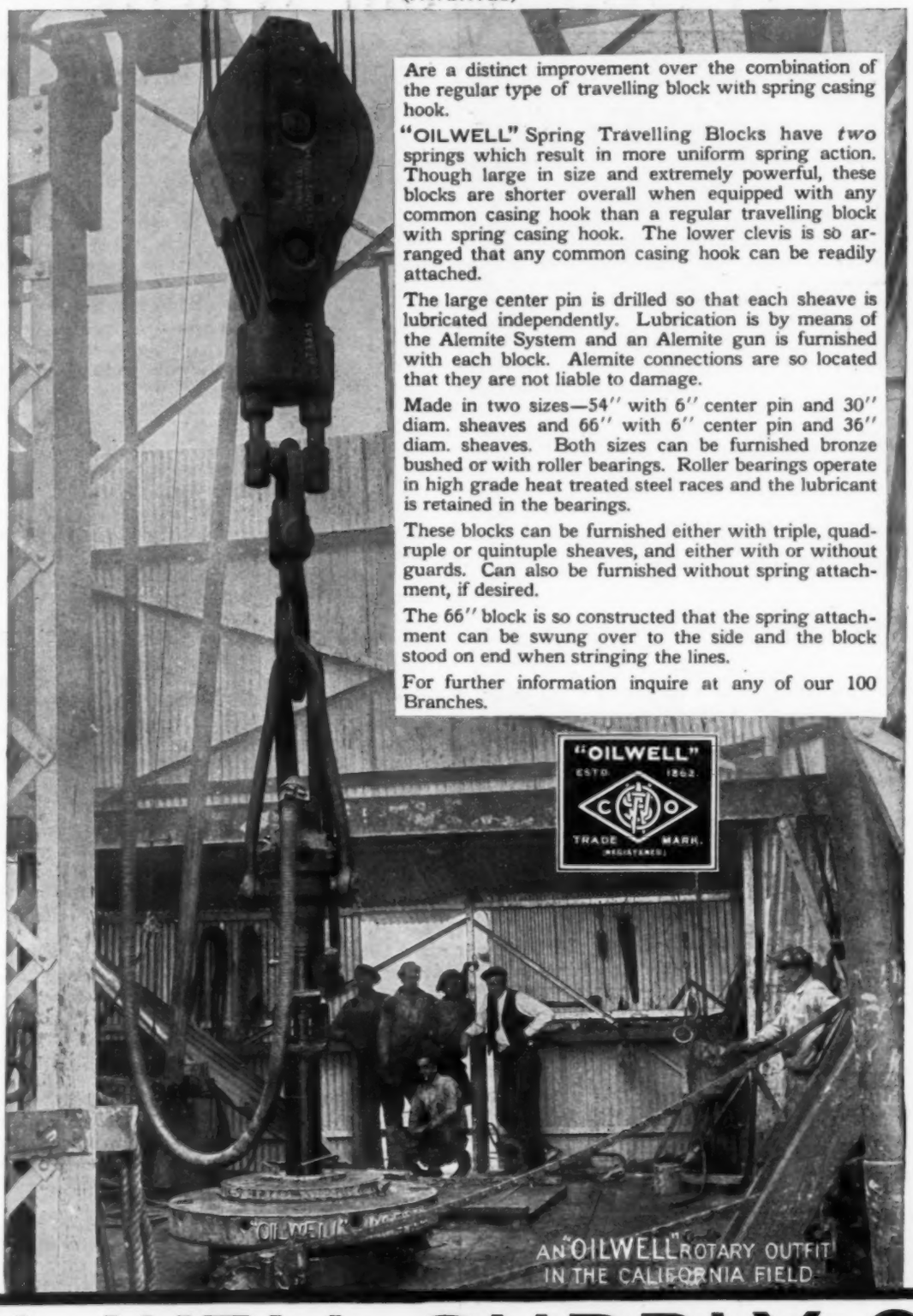

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Are a distinct improvement over the combination of the regular type of travelling block with spring casing hook.

"OILWELL" Spring Travelling Blocks have *two* springs which result in more uniform spring action. Though large in size and extremely powerful, these blocks are shorter overall when equipped with any common casing hook than a regular travelling block with spring casing hook. The lower clevis is so arranged that any common casing hook can be readily attached.

The large center pin is drilled so that each sheave is lubricated independently. Lubrication is by means of the Alemite System and an Alemite gun is furnished with each block. Alemite connections are so located that they are not liable to damage.

Made in two sizes—54" with 6" center pin and 30" diam. sheaves and 66" with 6" center pin and 36" diam. sheaves. Both sizes can be furnished bronze bushed or with roller bearings. Roller bearings operate in high grade heat treated steel races and the lubricant is retained in the bearings.

These blocks can be furnished either with triple, quadruple or quintuple sheaves, and either with or without guards. Can also be furnished without spring attachment, if desired.

The 66" block is so constructed that the spring attachment can be swung over to the side and the block stood on end when stringing the lines.

For further information inquire at any of our 100 Branches.

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WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

# Wewoka Well Flows 1000 Barrels Per Hour From Wilcox

## Unexpected production from one foot in sand; 22 tests drilling for deep horizon

*By Roye Munsell*
*Staff Representative*

Tulsa, Oklahoma—That the old Wewoka field in Seminole County, Oklahoma, will also contain a sizable Wilcox pool was further evidenced when the Magnolia Petroleum Company's Franz 3, SWc SW 32-8-8, began spouting fluid at the rate of 1,000 barrels an hour when drilled into the Wilcox horizon at 4,071 feet.

Since the Wilcox sand was topped only at 4,070 feet, the pay has just been scratched. When the sand was penetrated the tools and liner were immediately shot out of the hole and the control head torn away.

The unexpected oil was diverted into two 210-barrel flow tanks which were filled in less than 30 minutes. The owners were prepared for a 4,000 to 5,000 barrel well and unable, therefore, to successfully cope with the large flow for some time.

The Franz 3 offsets the Magnolia Harjo 1, NWc 5-7-8, which opened up the Wilcox sand there and revived the old Wewoka several weeks ago. The Harjo 1 found the Wilcox at 4,105 feet, or 35 feet lower than the Franz 3.

The Franz 3 was originally completed to the Dixie sand and at this writing seven other shallow producers are being deepened as fast as possible to the Wilcox. In all, it is reported, there are no less than 22 tests being hurriedly drilled to the deeper sand in the Wewoka field. The next well due in is the W. R. Ramsey Amos 4, C SW NW SE 31-8-8, an offset to both the new well and the discovery test.

What the outcome of this and the other wells will be when completed is still very much in doubt. The Wewoka district, it is well known to operators there, is highly subject to faults and more likely than not to furnish upsets where least expected.

### Wewoka Freakish

The completion during the week of the W. R. Ramsey Amos 1, NE SE SE 31-8-8, has convinced operators of the freakishness of the deep sand there. The Amos 1, just a quarter mile north of the initial producer, found water when drilled to 4195 feet. A 60 barrel showing, however, was had in the Hunton lime from 3975 to 4025 feet and the Amos 1 will be plugged back and made a Hunton producer.

It is believed by some geologists that a fault runs northwest northwest and southeast through, probably the center of section 6, 7-8, or half a mile west of the Harjo 1. The dip of the sand as shown by the Amos 1 seems to point to this condition.

As a result of the Ramsey Amos 1 coming in dry it was supposed that there was little possibility of the finding of production north of the Harjo 1. This was upset, of course, when the Franz 3 came in with a geyser flow. Finding the sand high there might indicate that the direction of production will be to the northeast.

The holding of production by the Harjo 1 and the sizable output of the Franz 3 indicates, in any event, that they are penetrating a rather larger pay. As yet the production of the Franz 3, just 660 feet north of the Harjo 1 has had no appreciable effect on the output of the initial producer.

### South Papoose

The Papoose sand in the South Papoose field, northern Hughes County, is evidently as irregular as the Wilcox in other areas. The Midland (Empire) Oil Company Proctor 1, SE SE NW 26-9-9, which had no more than a show of oil at 3412 to 3416 feet, picked up a pay sand at 3456 to 3460 feet after drilling through a break. It has filled up with oil and slopped over several times.

This came just in time to intercept the orders for abandoning the tests drilling north of the discovery well in the SW¼ 26-9-9.

Another delightful surprise was the Transcontinental Oil Company and Independent Oil & Gas Company Harjo 2, NWc SW 26-9-9, direct offset to the Harjo 1 discovery well, NE NW SW 26-9-9. The Harjo 2 found the Papoose sand at 3359 to 3372 feet aid started off at 40 barrels per hour. At this writing it is holding up to 37½ barrels an hour.

With the Harjo 1 making 700 barrels daily it appears as if the Harjo 2 will be a duplicate of it in size.

Southwest of present production the Phillips Petroleum Company's No. 2, SE NE SE 27-9-9, is flowing naturally at the rate of 620 barrels a day.

### Deeper Drilling at Braman

The deeper find of the Comar Oil Company in the Braman area with its Duncan 3, NE SE SW 21-29-1w, will probably call for deeper drilling there.

The Duncan 3 found a second Hoover sand at 2078 feet and started off at 65 barrels an hour. None of the wells in the north pool have been drilled into this lower Hoover as far as records show. Also, it ought to be noted, the Stalnaker sand which furnished the bulk of the production in South Braman, or the Townsite pool, is still to be explored in the north district.

### Kansas

A new high mark was set for oil activity in Kansas during the past week with 50 new locations staked in Kansas pools and wildcat districts.

In Lyon County, where a month ago the announcement of only one new test would have been worth mentioning, there are now 13 new locations, virtually every one of which are wildcats.

Lyon County, Kansas, is by all odds the most intensive wildcat area in the Mid-Continent, all due to the concerted efforts of operators to extend and prove the profitable Greenwood County trends which apparently project northeast into Lyon County.

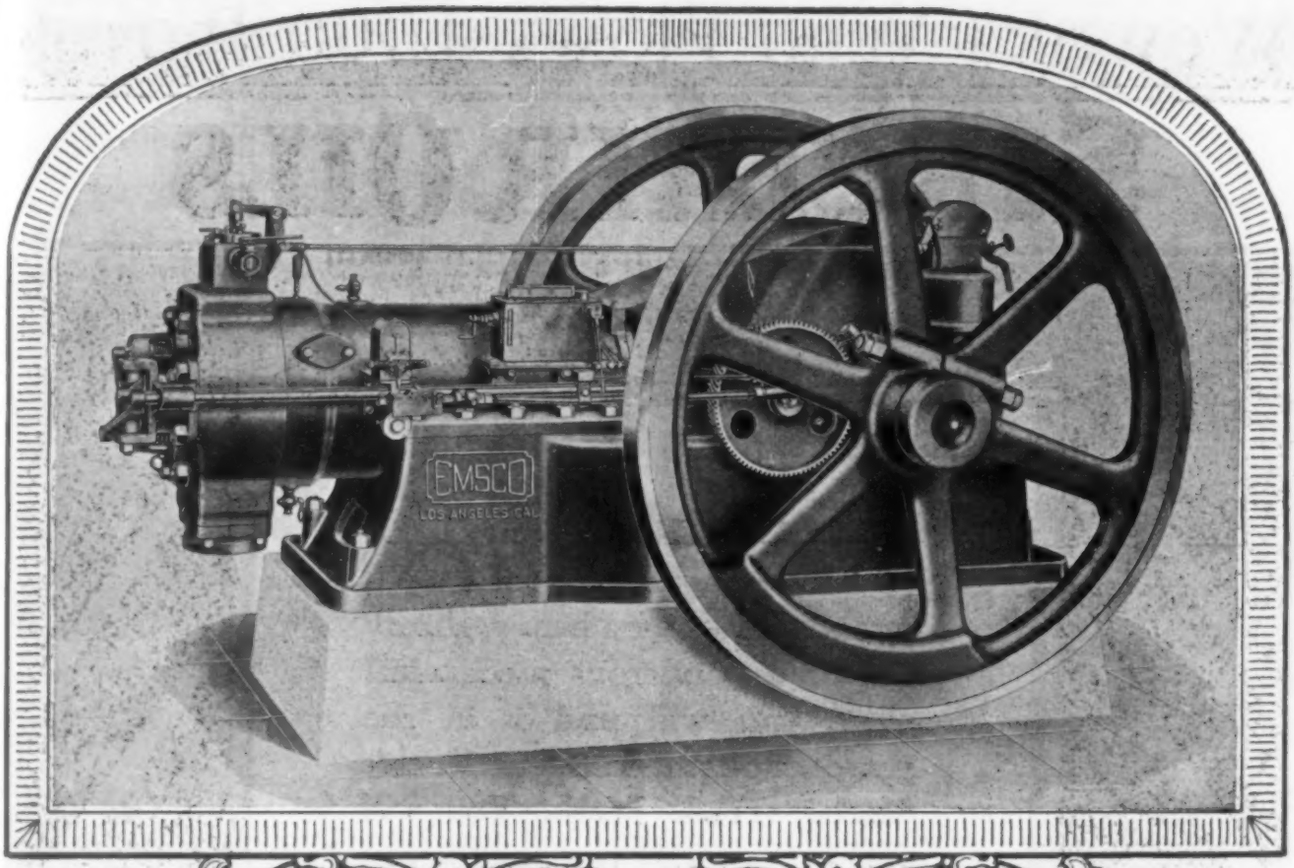
There are already three likely "pools" in Lyon County which line up fairly well with the trends in Greenwood County. They are: the Ritchey-Moore pool in 34-21-10, the Bradfield pool in 25-21-10, and the recent area opened in Lyon County by the Empire Gas and Fuel Company in 6-22-10, just across the line in Greenwood County.

While wildcat operations in Lyon County are confined very largely to the three tiers of southern townships, they have extended as far north as section 5, 9-11, two miles northwest of Emporia. There Culp and associates have a machine on the ground for their Perkins test. To the east, tests have extended as far as sections 9, 21-13, and 33, 19-13.

In Greenwood County there is the usual amount of new work, which makes a total of 40 or more wildcat tests in Lyon and Greenwood, and the adjacent counties of Butler and Chase.

In the western counties of the state, however, operators are apparently just a little more cautious. There the core drill is being used extensively as well as intensively.

It is reported that there are no less than a score of core drilling machines going in west central and west Kansas counties.

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# CRUDE OIL PRICE QUOTATIONS

## Crude Price Changes

January 26.—Effective today the Louisiana Oil Refining Corporation announced its first posting on Urania crude, at $1.50 per barrel.

## Current Postings

### CALIFORNIA

**Kern Rixer, Wheeler Ridge, McKittrick, Lost Hills, Coalinga, Newhall, Midway, Sunset, Elk Hills**

| | Jan. 27 1926 |
|---|---|
| 14 to 19.9 gravity | .75 |

**La Habra, Whittier**

| | |
|---|---|
| 14 to 19.9 gravity | .85 |
| 20 gravity | .87 |
| 21 gravity | .89 |
| 22 gravity | .91 |

**Montebello**

| | |
|---|---|
| 14 to 19.9 gravity | .85 |
| 20 gravity | .87 |
| 21 gravity | .89 |
| 22 gravity | .91 |
| 23 gravity | .94 |
| 24 gravity | .97 |
| 25 gravity | 1.01 |
| 27 gravity | 1.04 |
| 28 gravity | 1.07 |
| 29 gravity | 1.10 |
| 30 gravity | 1.13 |

***Torrance, Richfield, Inglewood, Brea, Olinda, Signal Hill, Huntington Beach**

| | |
|---|---|
| 14 gravity | .85 |
| 15 gravity | .87 |
| 16 gravity | .90 |
| 17 gravity | .94 |
| 18 gravity | .98 |
| 19 gravity | 1.02 |
| 20 gravity | 1.06 |
| 21 gravity | 1.10 |
| 22 gravity | 1.14 |
| 23 gravity | 1.18 |
| 24 gravity | 1.22 |
| 25 gravity | 1.26 |
| 26 gravity | 1.30 |
| 27 gravity | 1.34 |
| 28 gravity | 1.38 |
| 29 gravity | 1.42 |
| 30 gravity | 1.46 |
| 31 gravity | 1.52 |

*Inglewood and Torrance follow this posting through 28 degrees only.

**Lost Hills, Midway, Sunset, Elk Hills**

| | |
|---|---|
| 14 to 19.9 gravity | .75 |
| 20 gravity | .79 |
| 21 gravity | .84 |
| 22 gravity | .92 |
| 23 gravity | 1.00 |
| 24 gravity | 1.08 |
| 25 gravity | 1.16 |
| 26 gravity | 1.24 |
| 27 gravity | 1.32 |
| 28 gravity | 1.40 |
| 29 gravity | 1.48 |
| 30 gravity | 1.56 |
| 31 gravity | 1.64 |
| 32 gravity | 1.72 |
| 33 gravity | 1.80 |
| 34 gravity | 1.88 |

**Coalinga, Wheeler Ridge**

| | |
|---|---|
| 20 gravity | .91 |
| 21 gravity | .92 |
| 22 gravity | .93 |
| 23 gravity | .95 |

**Wheeler Ridge**

| | |
|---|---|
| 14 to 19.9 gravity | .75 |
| 20 gravity | .78 |
| 21 gravity | .81 |
| 22 gravity | .84 |
| 23 gravity | .87 |
| 24 gravity | .90 |
| 25 gravity | .93 |
| 26 gravity | .97 |
| 27 gravity | 1.00 |

**Coalinga**

| | |
|---|---|
| 14 to 19.9 gravity | .75 |
| 20 gravity | .79 |

| | Jan. 27 1926 |
|---|---|
| 21 gravity | .84 |
| 22 gravity | .89 |
| 23 gravity | .94 |
| 24 gravity | .99 |
| 25 gravity | 1.04 |
| 26 gravity | 1.09 |
| 27 gravity | 1.14 |
| 28 gravity | 1.19 |
| 29 gravity | 1.24 |
| 30 gravity | 1.29 |
| 31 gravity | 1.34 |
| 32 gravity | 1.39 |
| 33 gravity | 1.44 |
| 34 gravity | 1.49 |
| 35 gravity | 1.54 |

**Signal Hill**

| | |
|---|---|
| 31 gravity | 1.52 |

**Coyote Hills**

| | |
|---|---|
| 14 to 19.9 gravity | .85 |
| 20 gravity | .88 |
| 21 gravity | .94 |
| 22 gravity | 1.00 |
| 23 gravity | 1.06 |
| 24 gravity | 1.10 |
| 25 gravity | 1.16 |
| 26 gravity | 1.24 |
| 27 gravity | 1.30 |
| 28 gravity | 1.36 |
| 29 gravity | 1.42 |
| 30 gravity | 1.48 |

**Santa Fe Springs**

| | |
|---|---|
| 24 gravity | .97 |
| 25 gravity | 1.05 |
| 26 gravity | 1.13 |
| 27 gravity | 1.21 |
| 28 gravity | 1.28 |
| 29 gravity | 1.34 |
| 30 gravity | 1.40 |
| 31 gravity | 1.46 |
| 32 gravity | 1.52 |
| 33 gravity | 1.60 |
| 34 gravity | 1.68 |
| 35 gravity | 1.76 |
| 36 gravity | 1.84 |
| 37 gravity | 1.93 |
| 38 gravity | 2.00 |

**Rosecrans, Domingues**

| | |
|---|---|
| 26 gravity | 1.30 |
| 27 gravity | 1.34 |
| 27 gravity | 1.38 |
| 28 gravity | 1.42 |
| 29 gravity | 1.46 |
| 30 gravity | 1.50 |
| 31 gravity | 1.52 |
| 32 gravity | 1.52 |
| 33 gravity | 1.64 |
| 34 gravity | 1.70 |
| 35 gravity | 1.76 |
| 36 gravity | 1.84 |
| 37 gravity | 1.92 |
| 38 gravity | 2.00 |
| 39 gravity | 2.08 |
| 40 gravity | 2.16 |
| 41 gravity | 2.24 |
| 42 gravity | 2.30 |

**Fuel Oil**

| | |
|---|---|
| Richmond | 1.04 |
| El Segundo | 1.00 |
| San Pedro | 1.00 |

### EASTERN STATES

| | |
|---|---|
| New York Transit | 3.65 |
| Bradford District | 3.65 |
| National Transit | 3.55 |
| Southwest | 3.55 |
| Eureka | 3.50 |
| Macksburg | 3.30 |
| Gains | 2.95 |
| Somerset medium | 2.45 |
| Somerset light | 2.60 |
| Cabell | 2.35 |
| Ragland | 1.40 |
| Corning | 1.95 |

### CENTRAL STATES

| | |
|---|---|
| Illinois | 1.87 |
| Indiana | 1.78 |

| | Jan. 27 1926 |
|---|---|
| Lima | 1.98 |
| Plymouth | 1.40 |
| Princeton | 1.87 |
| Waterloo | 1.00 |
| Wooster | 2.00 |

### WESTERN KENTUCKY

**Posted by Indian Refining Company for crude from Allen, Warren, Franklin, Davies, Barren, Cumberland and Monroe Counties**

| | |
|---|---|
| 36 and above | 2.05 |
| 33 to 35.9 | 1.95 |
| 32.9 and below | 1.85 |

### MID-CONTINENT

| | Prairie Sinclair Texas Gulf | Magnolia |
|---|---|---|
| Below 28 | | 1.07 |
| 28 to 28.9 gravity | 1.15 | 1.15 |
| 29 to 29.9 gravity | 1.25 | 1.25 |
| 30 to 30.9 gravity | 1.31 | 1.31 |
| 31 to 31.9 gravity | 1.30 | 1.39 |
| 32 to 32.9 gravity | 1.47 | 1.47 |
| 33 to 33.9 gravity | 1.55 | 1.55 |
| 34 to 34.9 gravity | 1.63 | 1.63 |
| 35 to 35.9 gravity | 1.71 | 1.71 |
| 36 to 36.9 gravity | 1.79 | 1.79 |
| 37 to 37.9 gravity | 1.87 | 1.87 |
| 38 to 38.9 gravity | 1.95 | 1.95 |
| 39 to 39.9 gravity | 2.03 | 2.03 |
| 40 to 40.9 gravity | 2.11 | 2.11 |
| 41 to 41.9 gravity | 2.19 | 2.19 |
| 42 to 42.9 gravity | 2.27 | 2.27 |
| 43 to 43.9 gravity | 2.35 | 2.35 |
| 44 Baume gravity and above... | 2.43 | 2.43 |

### NORTH AND CENTRAL TEXAS

**Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran, Somerset and Big Lake crude**

| | Somerset (Grayburg) | Humble O. & R. Co. Texas Co. |
|---|---|---|
| 28 to 28.9 gravity | 1.15 | 1.15 |
| 29 to 29.9 gravity | 1.25 | 1.25 |
| 30 to 30.9 gravity | 1.31 | 1.31 |
| 31 to 31.9 gravity | 1.39 | 1.39 |
| 32 to 32.9 gravity | 1.47 | 1.47 |
| 33 to 33.9 gravity | 1.55 | 1.55 |
| 34 to 34.9 gravity | 1.63 | 1.63 |
| 35 to 35.9 gravity | 1.71 | 1.71 |
| 36 to 36.9 gravity | 1.79 | 1.79 |
| 37 to 37.9 gravity | 1.87 | 1.87 |
| 38 to 38.9 gravity | 1.95 | 1.95 |
| 39 to 39.9 gravity | 2.01 | 2.03 |
| 40 to 40.9 gravity | 2.07 | 2.11 |
| 41 to 41.9 gravity | 2.13 | 2.19 |
| 42 to 42.9 gravity | 2.19 | 2.27 |
| 43 to 43.9 gravity | 2.25 | 2.35 |
| 44 and above | 2.31 | 2.43 |

### SOUTH TEXAS

| | |
|---|---|
| Mirando (Texpata) | 1.05 |
| Mirando (Magnolia) | 1.05 |

### GULF COAST

| | |
|---|---|
| Grade "A" | 1.50 |
| Grade "B" at Blue Ridge, Hull and Pierce Junction | 1.25 |

### LULING

| | |
|---|---|
| Based on Contract | 1.10 |

### LOUISIANA-ARKANSAS

**Caddo**

| | |
|---|---|
| 38 gravity and above | 1.95 |
| 35 to 37.9 gravity | 1.85 |
| 32 to 34.9 gravity | 1.75 |
| Below 32 gravity | 1.65 |

**Homer**

| | |
|---|---|
| 35 gravity and above | 1.75 |
| 33 to 34.9 gravity | 1.65 |
| 31 to 32.9 gravity | 1.55 |
| Below 31 gravity | 1.40 |

(Continued on next page)

| Cotton Valley | Jan. 27 1926 |
|---|---|
| All grades | 1.10 |
| **Haynesville** | |
| Below 33 gravity | 1.55 |
| Below 33 gravity | 1.10 |
| **Bull Bayou** | |
| 38 gravity and above | 1.75 |
| 35 gravity to 37.9 | 1.60 |
| 32 to 34.9 gravity | 1.45 |
| De Soto crude | 1.80 |
| Crichton | 1.60 |
| Bellevue | 1.65 |
| Jennings | 1.50 |
| Vinton | 1.50 |
| Edgerly crude | 1.50 |
| Urania | 1.50 |
| **Smackover (Standard, Gulf, Louisiana, Shreveport-El Dorado and Atlanta)** | |
| 27 and above | 1.30 |
| 26 to 26.9 gravity | 1.25 |
| 25 to 25.9 gravity | 1.20 |
| 24 to 24.9 gravity | 1.15 |
| Below 24 gravity | .85 |
| **The Texas Company** | |
| 26 to 26.9 gravity | 1.25 |
| 25 to 25.9 gravity | 1.20 |
| 24 to 24.9 gravity | 1.15 |
| **El Dorado** | |
| 33 gravity and above | 1.65 |
| Below 33 gravity | 1.55 |
| East Field (Calion) | .85 |
| **Stephens District** | |
| 26 gravity and above | 1.40 |
| Below 26 gravity | 1.20 |
| **WYOMING-MONTANA** | |
| **Wyoming** | |
| Byron | 2.00 |
| Ferris | 1.28 |
| Elk Basin | 1.90 |
| Gres Creek | 1.90 |
| Rock Creek | 1.75 |
| Lost Soldier | 1.10 |
| Lance Creek | 1.90 |
| Mule Creek | 1.25 |
| Notches | .65 |
| Big Muddy | 1.75 |
| Osage | 1.90 |
| Hamilton Dome | 1.55 |
| Pilot Butte | 1.50 |
| Torchlight-Greybull | 1.90 |
| Lander | .85 |
| **Salt Creek (Midwest Refining Company)** | |
| 29 to 29.9 gravity | 1.23 |
| 30 to 30.9 gravity | 1.31 |
| 31 to 31.9 gravity | 1.39 |
| 32 to 32.9 gravity | 1.47 |
| 33 to 33.9 gravity | 1.55 |
| 34 to 34.9 gravity | 1.63 |
| 35 to 35.9 gravity | 1.71 |
| 36 to 36.0 gravity | 1.79 |
| 37 to 37.9 gravity | 1.87 |
| **Montana** | |
| Sunburst | 1.15 |
| Cat Creek | 1.90 |
| **NEW MEXICO** | |
| Artesia | 1.35 |
| Hogback | 1.95 |
| **CANADIAN CRUDE** | |
| Oil Springs | 2.45 |
| Petrolia | 2.38 |

*Bounty on Canadian crude is ¾ cent per gallon, or 26¼ cents per barrel.

# Boling Only New Coastal Field Due for Drilling Boom

*(Continued from page 34)*

field about 25 miles away. The first few miles of the line had been laid at the beginning af the week.

A distillation test of Boling Crude, which tests 33 gravity, showed 36 per cent gasoline content, 50 per cent gas oil, and 10 per cent fuel oil.

Orchard dome, which gave up its first oil to the Gulf Production Company January 18, will not add any material production of mention to the daily yield of Coastal fields soon and will probably be no great determining factor in turning the trend of crude, in this section upward before the summer months. A tract of 12,000 acres around the new well is held by the Gulf and it is reasonable to believe that production from around this dome will not feature to any appreciable extent in the production figures for 1926.

The Moore 5, discovery well at Orchard, is now shut in except for a flow of around 150 barrels daily leaking through a cracked gate valve. This flow is being moved to the Gulf's refinery at Port Arthur by tank car leaded through a temporary loading rack and a small fuel line running from the well to the Santa Fe Railroad about 1½ miles away. Four 1000-barrel steel storage tanks are now under construction, and the well will be turned loose to flow when these are completed. In the event it proves a substantial producer a pipe line will be laid to the well from the Big Creek field, about 12 miles to the southeast.

Like Orchard, the Nash dome opened by Rycade January 3, is practically controlled by a single company. Rycade holds leases on more than 11,000 acres of the land to drill as it sees fit. The company has three new locations made for drilling in the vicinity of the Nash 5 producer, which indicates either immediate development or the outlining of the productive area around the dome. A derrick is standing for the Nash 6, location is made for the Nash 7 and the Flessner 2 is rigging to drill.

At the Spindletop extension, made three weeks ago by Yount-Lee's McFaddin No. 3, about 1500 feet to the south of old production, the situation is somewhat the same as around the newly opened domes. Yount-Lee Oil Company controls the major portion of land around the dome and particularly in the vicinity of the new well where more than 4,500 acres protect the company's holdings. Probably the nearest company to the producer besides Yount-Lee is the Gulf with several small blocks more than 1200 feet to the south. No further locations have been announced by Yount-Lee near the producer, and officials of the company state that no more than two rigs will be used soon. The Gladys City No. 2 of Yount-Lee, located on the northwest side of the dome, is rigging. The McFaddin 3 is holding a flow of approximately 4500 barrels. The gravity is between 23 and 24.

At Piedras Pintas dome, where December 20, Humble struck production with a 1000-barrel 43 gravity well, production is still stopped, the Walsh 4 discovery well having ceased flowing two weeks ago. Humble spudded its Walsh 5, 400 feet to the south and 100 feet to the east of the No. 4, and is drilling at around 1000 feet. Seagraves, Moody and Morgan have spudded in their Walsh 1 to the east of the discovery well and the Grayburg Oil Company has location for its Halff 1 on a 160-acre tract three-fourths of a mile to the north of the producer. The Piedras Pintas dome territory will in some measure be the same proposition as that of the other three individually blocked domes; slow development due to the fact that Humble holds the choice acreage around the probable productive section.

## Tulsa Engineers to Have Lecture on Water Flooding

Tulsa, Oklahoma.—J. B. Umpleby of Bradford, Pennsylvania, will discuss "Increasing the Extraction of Oil by Water Flooding" before a joint meeting of the American Institute of Mining and Metallurgical Engineers and the American Society of Mechanical Engineers. The meeting which is under the direction of the A. I. M. M. E., will be held January 29 at 8 o'clock in the auditorium of the municipal building at Tulsa.

J. B. Umpleby is vice-president and general manager of the Petroleum Reclamation Company of Bradford, which has properties in the Bradford fields of Pennsylvania and which is following an extensive campaign of flooding. Mr. Umpleby is well qualified to discuss the process of flooding from both the practical and theoretical standpoint.

Those interested in the recovery of oil by water flooding have been invited to meet with these societies and hear this discussion of the subject.

## Prominent Operator Dies

Shreveport, Louisiana.—Isaac Muslow, prominent oil man of Louisiana and Arkansas, died here, Saturday, January 23. At the time of his death, Mr. Muslow was president of the Muslow Oil Company, and the State Line Oil and Gas Company. He was also a member of the directorate of the First National Bank, and had a multitude of other business interests in Louisiana and elsewhere.

# Mountain States Operators Planning Much Spring Drilling

Casper, Wyo.—Operators in Wyoming, Montana, Colorado, New Mexico and Utah are already planning the spring drilling campaign. If the price of oil is maintained and general conditions improve in the industry, development in the Rocky Mountains during the present will equal if not surpass that recorded last year. Wildcatting will certainly increase and drilling in some of the larger fields also promises to be lively. Particularly will this be the case in the Kevin-Sunburst field, where the peak of production is not expected to be reached for several years. The pipe line situation, which is none too good there now, is expected to adjust itself as soon as additional storage is erected. New outlets are now being found for the crude. In the Salt Creek field, enough wells will be drilled to maintain a steady production.

The receivers of naval reserve number three, more commonly known as Teapot dome, recently granted permission to the Mammoth Oil company to deepen another well on the extreme northern end of the field. This well is now practically completed and promises to produce upward of 100 barrels daily from the third Wall Creek sand. Independent operators in the Salt Creek field, which adjoins Teapot dome, have drilled several wells along the southern fringe of the field. In doing so, they have found the third Wall Creek sand generally productive. As the wells completed by the Mammoth or Sinclair interests produce principally from the second Wall Creek, it has been found necessary to deepen the Teapot wells to prevent drainage. In addition to granting permission to deepen wells along the edge of the field, it is understood that the receivers have even consented to drilling additional wells. In many instances, there would be no other recourse as the outside operators are crowding the naval reserve with their locations. The depth of the third Wall Creek sand in this part of the field averages about 2900 feet.

Stimulated by recent discovery of a productive deep sand in the Pilot Butte field, the demand for leases in this field has been very keen. The Wyoming syndicate has acquired a lease near the heart of the field but has not announced a definite drilling program. Ordinarily the production has come from a very shallow sand. The Argo Oil company recently completed a small producer in a deep sand.

Simultaneously with the announcement that it has increased its capital stock from less than $400,000 to $3,000,000, the Sunburst Oil & Refining company has announced that it will drill about 200 wells in the Kevin-Sunburst field during the present year. The company is composed of many prominent oil men and its action will influence the activities of many smaller companies operating in the field.

Four wells were completed in the Kevin-Sunburst field during the past week. The Fulton Oil company completed a 2400 barrel well on the northwest quarter of section 31-35-1. This company has been exceptionally fortunate in the location of its wells. The Ohio Oil company completed a small producer on section 30-35-1, which produced 100 barrels during the first 24 hours. The Treasure Oil company completed a 160 barrel well on section 25-35-2. Only a small percentage of the oil from the field is being marketed and this has caused a temporary lull in activities.

The Department of the Interior has issued an interesting memorandum on the history, development and future of the Kevin-Sunburst field. The paper deals briefly with the early history of the field. This is followed by the geography, stratigraphy, structure and exploration of the field and general character of the oil. The memorandum states that the peak production of the field may not be reached for several years, due to the size of the structure and the fact that most of the development has been in the vicinity of the largest wells rather than over a widely-scattered area. Wells have been drilled all over the field, but due to the spotted condition of the productive sands, even more important developments may be brought to light it is hinted.

The Phillips Petroleum Company has become interested in the Artesia (New Mexico) field and will erect a large natural gasoline plant as soon as materials can be assembled. It has not been announced whether the company will become actively engaged in the production of oil at Artesia. Gas wells in the field as well as producers carrying good quantities of casinghead gas have not been as profitable in the past as they should have been, due to the limited means of recovering the gas.

The Bent County Oil & Gas company practically has abandoned its well on section 16-23-52, Bent county, Colorado, although an effort will be made to deepen the well later in the year. This test has held considerable interest throughout the state, particularly among the geologists, since the location was made by a man who operated some sort of vibrating instrument. Another enthusiast checked the locator with a still more "scientific" instrument and the location was declared ideal. Geologists passed unfavorably on the structure, it is understood. The test has reached a depth of nearly 4000 feet with little sign of oil. Much valuable geological data has been brought to light as it is one of the few wells ever drilled on the west side of a long uplift running through this part of Colorado and into New Mexico.

An unusual situation has arisen in Utah, where the Texas company has acquired valuable acreage in the Colorado river bed, near the well recently brought in as a producer by the Midwest Refining company. The state of Utah claims the lands under the river. These state leases were recently granted to individuals who have transferrred them to the Texas interests. It is understood that the government also claims jurisdiction over the river lands. The river winds around and cuts three of the most promising domes. Engineers are now attempting to work out plans for drilling a well in the river.

Permission has been asked of the government land office by the Utah Oil Refining company to build an oil line over government land from the newly-discovered Cane Creek (Utah) field to the town of Floy, about 40 miles distant. The company states in filing its petition, that the estimated cost of the pipe line is $700,000 and that it considers the new field sufficiently proven to warrant the expenditure. A 25-foot right of way is requested.

---

**L. R. Burns**, Houston representative of the Beaumont Iron Works, has moved his headquarters to the Bristol Hotel.

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**E. C. Kirby** has taken charge of the recently opened Houston office of the Smith Separator Company at 511 State National Bank Building.

---

**Theo. A. Link**, geologist for the Tropical Oil Company, who has for some time been located in Barranca Berineja, Columbia, S. A., has left the company for an extended leave of absence. He will spend some time during the winter and spring at La Porte, Indiana.

---

Wichita Falls, Texas.—The Plains Gas & Fuel Company has been organized to buy and sell crude, coke and refined oils. Headquarters are established at 510 Perkins-Snider building, with L. M. Lingenfelter, formerly with Miller Petroleum Company, in charge.

# Theory and Practice of High Speed Rotary Drilling

*By Harry Pennington*
*Mechanical Engineer*

THERE is no standard practice relative to rotative speeds in rotary drilling; in the same field, we can see rotaries running at thirty, sixty, ninety revolutions per minute, and each one will have the same speed maintained throughout the hole, whatever the formation.

The individual characteristics of each driller are expressed in the method used in making hole; one may let down a heavy weight, rotate slowly, while another may let down a lighter weight and rotate faster.

The writer believes, after seven years investigation and use of higher relative speeds, that higher rotative speeds are beneficial in many ways and that the maximum of hole is secured with high rotative speed and heavier feeds; that a hole can be logged more accurately with high speed, due to greater sensitiveness of the drilling equipment secured with speed; that faster hole can be made with greater safety; that straighter hole can be made with the same drill pipe in the same hole at higher speed; that wells can be better protected against caving, and that drill pipe is stressed less, securing greater freedom from fatigue or crystallization, when fishtail and disc bits are operated at high relative speeds.

### What High Speed Means

By high relative speed is meant speeds in excess of those in current use, and also the peripheral speed of the points of the bit; a low average would be thirty; a medium average, sixty, and a high average, ninety, current in the field, while the speeds covered by this paper are those above one hundred and twenty-five revolutions, on up to two hundred in a moderate sized hole, and up to three hundred in a small hole where the drill pipe fits rather snugly, but with sufficient clearance to flush the hole easily.

I should say though that especially constructed rotaries are necessary for maintaining higher speeds than those in current use. The average speed, termed high at the present time, as used by the writer range around two hundred revolutions per minute, although when the diameter of hole and the drill pipe will permit higher speeds, performance shows that higher speed sets up better records.

The foregoing classification, arbitrarily made, but based upon current field practice will be used in this exposition.

The limitations upon speed are the critical speeds of the drill pipe; the limitation upon feed is the torsional capacity of the drill pipe. The term critical speed is the best that the writer can apply to drill pipe rotating in the hole at this time, and, before going further, I shall make some definitions.

### Some Definitions

Torque is the turning or twisting moment, or effort, imparted to a shaft to make it rotate. Torque may be measured in pounds inches or pounds feet; pounds feet will be used here. One pound foot of torque is equivalent to the twisting moment imparted by a weight of one pound applied at a distance of one foot from the center of a shaft to cause the shaft to rotate. A weightless lever, with one pound of weight placed one foot from the center of shaft develops one pound foot of torque. When the effort to turn the shaft is continuous around the circumference of the one foot diameter circle, horsepower is developed and, therefore, horsepower can be expressed in terms of torque and speed, as well as in the customary manner, viz., the lifting of 33,000 pounds one foot in one minute equals one horsepower of work. In the measurement of torque, any length lever may be used, as, for instance, a two foot lever with a weight of one half pound develops also, one pound foot of torque, and so on.

In this discussion, the drill pipe will be treated as a shaft—a hollow shaft for transmitting power from the surface down to the bit and therefore, the characteristics of shafting will be set out for the purpose of outlining as closely as possible the duty required of drill pipe, especially in high speed rotation and heavy feed.

The capacity of shafting may be measured in pounds feet of torque, and one of the simplest expressions for torque is that obtained by reducing customary formulae to the following:

$$\text{Torque, T, equals} \frac{\text{BHP} \times 5252.1}{\text{RPM}}$$

Where BHP equals the brake horsepower of the engine and RPM equals revolutions per minute. This is simply the effort applied at the end of a one foot lever, and the formula applies to any kind of engine or electric motor, but is more customarily used in gauging the capacity of high and moderate speed gas and gasoline engines of the multi-cylinder vertical type. Other engines, steam and Diesel, are rated as to the indicated horsepower of the cylinder of the steam engine, and as to the brake horsepower developed at the shaft of the Diesel. But these also can be rated in terms of pounds feet of torque; the dynamometers used for testing the horsepower of all prime movers use torque as a basis. I should say here though that the torque curve of a steam engine or an electric motor, such as used for drilling, differs widely in characteristics from the multi-cylinder engine of the high speed internal combustion type.

For example: a 100 horsepower engine at 1000 revolutions per minute. The Torque is found by the formula: 100× 5252.1 divided by 1000, which equals 525 pounds feet of torque, or the torque necessary to develop one hundred horsepower with the engine running at 1000 revolutions per minute. If the same torque were exerted at 500 revolutions per minute, the horsepower becomes fifty.

No definite measurements of torque required for drilling have been made, especially with steam driven rigs, but, in using multi-cylinder gasoline engines, of which the writer has operated several, in which the engine torque has been measured and is known to within three or four per cent, the torque required for drilling can be determined by deduction to within ten or twelve per cent, provided the load while drilling approximates the full load capacity of the engine.

Of course, the torque requirement varies with all the classes of formations encountered; toughness of the formation, hardness, brittleness, as factors of the formation requiring more or less weight on the bit to drill and adding more or less torque to the drill pipe, and gumbo, balling up and making a sticky hole, as another factor, are such as to set up the greatest variety of variables, but the driller becomes expert in adjusting the weight on the bit and the speed to such point as to develop the maximum safe capacity of the drill pipe, and when this is done, maximum hole at a given rotative speed is, of course, realized, and the only additional means of securing faster hole is by means of adding speed to the bit.

Using six-cylinder gasoline engines of which the writer has operated several, the torque, maximum, as tested with dynamometer, was 375 foot pounds with the engine at 1000 revolutions. In this engine, the torque curve rises to maximum at about 700 revolutions and then lowers with lower speed.

### Torque Developed

With a speed ratio between engine and rotary of six of the engine to one of the rotary, the torque that may be imparted to the drill pipe by the rotary is multiplied by six, with a small deduction for friction, with the engine at full load and at 1000 revolutions per minute. The torque developed at the drill pipe is now seen to be 2250 pounds feet maximum, due to effort from the engine cylinder, and with a friction loss of 10 per cent, the net torque applied to the drill pipe becomes 2025 pounds feet. This, then, in this arrangement of ratios in equipment, is the maximum engine torque that could be applied to the drill pipe, but this is assumed to be without shock. The stored energy of the engine flywheel is resolved into torque should the bit strike an obstruction, and the figures given above, therefore, do not contain an allowance for flywheel torque, that is, additional torque that might be applied to the drill pipe. Consequently, a large factor of safety in this direction is necessary for prevention of twist off, when the bit digs

with a heavy weight on it, or when the hole balls up with gumbo.

And, since this paper can be simplified by using multi-cylinder, vertical, moderate speed engines of the internal combustion type for an example, these are used. The torque imparted by steam engines depends upon the average pressure of steam in the engine cylinder, or the mean effective pressure, and speed, and while the torque could be ascertained by using steam engine indicators, so much preparation is necessary that the writer has used this method only once.

It is a well known fact, determined by experiment, and reduced to exact formulae, that a shaft will transmit a maximum amount of torque, whatever the speed, all other things being equal. And, as horsepower varies directly with revolutions, a shaft running at 200 revolutions will transmit twice as much power as the same shaft running at 100 revolutions per minute, without any great stress on the shaft. Thus, a two inch diameter solid shaft will safely transmit one hundred and sixty horsepower at one thousand revolutions per minute, using an average stress allowance for mild steel with a fair safety factor, and at five hundred revolutions per minute, the same shaft will have a safe carrying capacity of one half as much, or 80 horsepower, which capacity can be expressed at pounds feet torque at the speeds named.

### Shaft Capacities

The shaft itself, its material of manufacture and its heat treatment, bears on its capacity. An average skin stress for mild steel shafting may be taken at 7,500 pounds per square inch, while an alloy steel shaft of high grade, with proper heat treatment may be taken at twice as much, with the same factor of safety. Then, an alloy steel shaft two inches in diameter will transmit safely three hundred and twenty horsepower at 1000 revolutions per minute, although, if the shaft has any bending stress imposed on it, in addition to torsional stress, this size would not be selected.

The modulus of elasticity of steel in shear is about 40 per cent of the modulus in tension; torsional stresses are shear stresses, hence in calculations of the size of shafting, or drill pipe used for transmitting power, the modulus should be taken at 12,000,000 pounds per square inch.

Assuming that the deflection of pipe in the hole, due to letting down weight, is a huge result of critical speed, the following on critical speed is included.

A hollow shaft is fixed in two journals, one at each end. When rotated slowly, the shaft does not whip, and slowly increasing the speed, we find that extremely high speed is necessary to cause whipping and that the larger the diameter of the shaft, the greater the speed must be to set up whipping. Deflection is caused by the wall being of uneven thickness around the circumference, and by bending due to weight, setting up centrifugal force that unbalances the shaft and causes it to rotate about its center of gravity, rather than the center of the shaft. But, increasing the speed still more, the shaft will flex to a definite arc, and the arc will not rotate, or whip, and the shaft will spin truly in a bent form. One of the best examples of this phenomenon is in the flexible shaft of the Delaval steam turbine, which revolves at speeds from 10,000 to 20,000 revolutions per minute, without whipping, and without injury to the bearings or shaft, while a stiff, rigid shaft would soon whip the bearings out. The steam driven wheel, disc, seeks its center of gravity and rotates truly about this center, though the shaft may be flexed.

Measurement of the critical speed of seamless tubing rotated in a vertical position, by gauging the amount of deflection at increasing speeds, shows that with uniform wall thickness, as seamless tubes should be made, critical speed is above 2,000 revolutions for short shaft, or those with a length equal to thirty times the diameter. And setting the shaft vertically, adding a weight to the bottom of the shaft, making a flywheel especially balanced for high speed, the critical speed of this shaft increases to above 3000 revolutions per minute. And, when the critical speed is reached, running through the same quickly, the shaft again settles down to accurate spinning.

### In Diamond Drilling

In diamond drilling, where high speed is used, with light feed to prevent dislodging the diamond cutting edges, the diameter of hole is but little greater than the pipe, for the drill pipe is joined by interior threads, presenting a smooth exterior without couplings projecting. Since the hole is small, and the weight of pipe low, the weight of pipe let down is also low, so that most of the weight of pipe is suspended. Less flexure results, from both these conditions and diamond drilling speeds are high—200 to 300 revolutions per minute—compared to standard rotary practice in heavy work in the field today. Twist-off rarely occurs, using the same grade of seamless drawn tubing as used in rotary work.

If a nine-inch hole is to be drilled, a five-inch drill pipe will fill the hole more closely than four-inch, resulting in less whipping due to a closer fit of pipe in the hole, preventing flexure.

In certain combinations of hole diameter, drill pipe diameter, depth of hole and speed, drill pipe will rotate smoothly without vibration at forty revolutions per minute; increasing the speed to ninety revolutions, vibration may be set up, causing the pipe to whip in the hole, and, increasing the speed further, to one hundred and fifty revolutions, vibration ceases, and the pipe spins truly without whipping. There are many factors to this phenomenon, that is, the factors of hole diameter, pipe diameter, weight of pipe, depth of hole and speed are so variable that a solution would be interminable, and a general rule only based upon experiment, can be formulated for the removal of vibration.

A drill pipe is a simple, hollow shaft, transmitting power from the rotary down to the bit, and with loosely fitting bearing in the hole. The stresses imposed upon the drill pipe by the drilling equipment can be closely calculated, in smooth drilling, but in rough drilling, boulders, where the kinetic energy of the engine flywheel and the rotary table may be converted many times in one minute, into torque, the problem takes on complexity, and the only safe method is to use pipe that cannot be stressed beyond the elastic limit, or to limit the torsional capacity of the equipment to that which will not stress the pipe used to the deformation point.

### Strength of Pipe

The hollow shaft is an ideal means of transmitting power of rotation, fortunately. The metal is disposed at the greatest distance from center, where it can resist stress better. The strength of a hollow shaft, say four and one half inches outside diameter, with three and three quarters inches inside diameter, is that of a solid shaft four and one-half inches in diameter, less the strength of the shaft removed from the center, obviously. A simple method of computing the capacity of drill pipe is to first ascertain the capacity of a solid shaft equal to the outside diameter, and then deduct from this, the strength of a solid shaft equal to the inside diameter. A common formula, taken from Halsey, for solid shafts, is:

$$d \text{ equals } \sqrt[3]{\frac{100 \times HP}{RPM}}$$

in which d equals diameter of shaft; HP, horsepower and RPM, revolutions per minute, and in which the outer fibre stress is taken at 4280 pounds per square inch. Since the torque capacity is constant for any speed, by substituting 100 for RPM, the diameter of shaft necessary at 100 RPM is, in inches, the cube root of the horsepower and conversely, the horsepower carrying capacity of a shaft at 100 revolutions per minute, is the cube of the diameter of the shaft, in inches. These are affected by distance between supports, length, and so on of course, but are used as a basis.

The strength of steel is taken low. We have then the following table, obtained first by computing the capacity of a solid shaft equal to the outside diameter of the drill pipe and deducting from this, the capacity of a solid shaft equal to the inside diameter of the pipe.

**TABLE NO. 1**
**SEAMLESS DRAWN UPSET END DRILL PIPE**

| Size of drill pipe, Inches | Weight per ft. | Outside Diam. | Inside Diam. | Cap. at 100 RPM | Torque Capy. lbs. ft. |
|---|---|---|---|---|---|
| 2 | 4.50 | 2.375 | 2.000 | 5 | 262 |
| 2 | 6.50 | 2.375 | 1.815 | 7 | 367 |
| 2½ | 6.40 | 2.875 | 2.469 | 9 | 472 |
| 2½ | 8.30 | 2.875 | 2.323 | 11 | 577 |
| 2½ | 10.45 | 2.875 | 2.151 | 13 | 682 |
| 3 | 8.45 | 3.500 | 3.063 | 15 | 787 |
| 3 | 13.25 | 3.500 | 2.746 | 20 | 1040 |
| 3 | 11.15 | 3.500 | 2.900 | 19 | 997 |
| 3½ | 11.00 | 4.000 | 3.500 | 22 | 1155 |
| 4 | 12.65 | 4.500 | 4.000 | 27 | 1418 |
| 4 | 13.60 | 4.500 | 3.958 | 30 | 1575 |
| 4 | 16.50 | 4.500 | 3.826 | 36 | 1960 |
| 4½ | 14.20 | 5.000 | 4.500 | 34 | 1785 |
| 5 | 18.90 | 5.563 | 4.975 | 48 | 2521 |
| 5 | 22.00 | 5.563 | 4.859 | 57 | 2995 |
| 5 | 25.25 | 5.563 | 4.733 | 65 | 3414 |
| 6 | 22.00 | 6.625 | 6.065 | 68 | 3571 |
| 6 | 25.00 | 6.625 | 5.965 | 78 | 4096 |
| 6 | 31.75 | 6.625 | 5.761 | 105 | 5514 |

(Continued on page 66.)

# AVERAGE DAILY PRODUCTION FOR U.S.

## Texas

### NORTH TEXAS

| | Jan. 16 | Jan. 23 |
|---|---|---|
| Burkburnett | 12,800 | 12,600 |
| Electra | 16,950 | 16,700 |
| Iowa Park and K-M-A | 5,500 | 5,350 |
| Wilbarger | 11,700 | 11,400 |
| Panhandle | 1,500 | 1,800 |
| Petrolia | 400 | 400 |
| Archer County | 30,200 | 29,600 |
| Others | 900 | 850 |
| Total | 79,950 | 78,700 |

### EAST CENTRAL TEXAS

| | | |
|---|---|---|
| Mexia | 13,950 | 13,850 |
| Currie | 1,100 | 1,050 |
| Richland | 2,550 | 2,550 |
| Corsicana-Powell | 33,200 | 33,700 |
| Wortham | 12,900 | 12,100 |
| Total | 63,700 | 63,250 |

### WEST CENTRAL TEXAS

| | | |
|---|---|---|
| Stephens County | 13,050 | 12,850 |
| Eastland County | 6,200 | 6,200 |
| Desdemona | 2,050 | 2,050 |
| Young County | 9,250 | 8,950 |
| Palo Pinto County | 400 | 400 |
| Callahan County | 4,950 | 4,700 |
| Shackelford County | 2,350 | 2,300 |
| Reagan County | 33,250 | 33,750 |
| Others | 5,000 | 4,750 |
| Total | 76,500 | 75,950 |

### SOUTHWEST TEXAS

| | | |
|---|---|---|
| Luling | 20,500 | 20,300 |
| Mirando | 6,200 | 6,200 |
| Somerset | 2,200 | 2,250 |
| Lytton Springs | 8,100 | 7,850 |
| Piedras Pintas | 900 | ... |
| Others | 600 | 850 |
| Total | 38,500 | 37,450 |
| Texas total outside Gulf Coast | 258,650 | 255,350 |

### GULF COAST

| | | |
|---|---|---|
| Goose Creek | 8,650 | 8,700 |
| Hull | 15,250 | 14,850 |
| Saratoga | 1,300 | 1,250 |
| Blue Ridge | 800 | 800 |
| Damon Mound | 1,000 | 1,050 |
| Batson | 1,000 | 950 |
| West Columbia | 8,800 | 9,200 |
| Humble | 4,750 | 4,750 |
| Pierce Junction | 1,450 | 1,250 |
| Sour Lake | 3,750 | 5,300 |
| Spindletop | 2,800 | 6,350 |
| Orange County | 14,400 | 13,850 |
| Edgerly | 650 | 650 |
| Evangeline | 1,000 | 1,050 |
| Vinton | 6,700 | 6,600 |
| Lockport | 2,350 | 2,150 |
| South Liberty | 8,000 | 7,700 |
| Big Creek | 950 | 950 |
| Boling | 3,950 | 4,650 |
| Others | 1,200 | 1,050 |
| Total | 68,750 | 93,050 |

## Oklahoma

| | | |
|---|---|---|
| North Braman | 2,200 | 2,150 |
| South Braman | 4,500 | 9,050 |
| Blackwell | 2,950 | 3,050 |
| Hubbard | 1,800 | 2,050 |
| Thomas | 14,550 | 13,750 |
| Tonkawa | 45,550 | 45,100 |
| Garber | 24,450 | 23,050 |
| Burbank | 44,500 | 44,050 |
| Osage, (Outside Burbank) | 32,950 | 32,205 |
| Watchorn | 1,850 | 1,800 |
| Cushing | 22,700 | 22,600 |
| Yale Jennings | 11,800 | 11,500 |
| Davenport | 21,450 | 21,250 |
| Bristow-Slick | 31,800 | 31,350 |
| North Okmulgee | 18,800 | 18,450 |
| Lyons-Deaner | 4,400 | 4,300 |
| Stroud | 2,850 | 2,800 |
| Cromwell | 20,550 | 19,750 |
| Papoose | 12,850 | 11,550 |
| Wewoka | 11,700 | 12,900 |
| Duncan District | 7,600 | 7,450 |
| Graham | 9,100 | 9,100 |
| Fox | 4,100 | 4,050 |
| Healdton | 15,050 | 14,950 |
| Hewitt | 13,200 | 12,850 |
| Others | 63,500 | 61,500 |
| Total | 447,750 | 442,450 |

## Kansas

| | | |
|---|---|---|
| Florence-Covert | 1,900 | 1,900 |
| Peabody-Elbing | 4,850 | 4,850 |
| Eldorado-Towanda | 14,200 | 14,150 |
| Augusta-Fox Bush | 5,100 | 5,000 |
| Rainbow Bend | 5,950 | 5,750 |
| Russell | 5,650 | 5,600 |
| Others | 62,750 | 61,150 |
| Total | 100,400 | 98,400 |

## Louisiana

| | | |
|---|---|---|
| Homer | 5,750 | 5,750 |
| Haynesville | 10,400 | 11,400 |
| Caddo Light | 9,450 | 8,450 |
| Caddo Heavy | 2,350 | 2,450 |
| De Soto-Red River | 3,850 | 3,850 |
| Elm Grove | 600 | 600 |
| Bellevue | 2,250 | 2,250 |
| Cotton Valley | 8,300 | 8,450 |
| Others | 550 | 700 |
| Total | 43,500 | 43,900 |

## California

| | Jan. 16 | Jan. 23 |
|---|---|---|
| Santa Fe Springs | 51,000 | 50,000 |
| Long Beach | 112,000 | 112,000 |
| Huntington Beach | 46,000 | 46,000 |
| Torrance | 31,000 | 31,000 |
| Dominguez | 23,500 | 23,000 |
| Rosecrans | 23,000 | 23,000 |
| Inglewood | 59,000 | 55,000 |
| Midway-Sunset | 92,000 | 92,000 |
| Others | 182,000 | 181,000 |
| Total | 619,500 | 613,000 |

## Arkansas

| | | |
|---|---|---|
| El Dorado | 7,450 | 7,400 |
| Smackover Light | 19,200 | 19,350 |
| Smackover Heavy | 154,300 | 151,950 |
| Stephens | 1,700 | 1,700 |
| Nevada | 1,600 | 1,600 |
| Total | 184,250 | 182,000 |

## Mountain States

### WYOMING

| | | |
|---|---|---|
| Salt Creek | 61,450 | 57,450 |
| Grass Creek | 2,750 | 2,800 |
| Elk Basin | 700 | 600 |
| Big Muddy | 3,350 | 3,400 |
| Lost Soldier | 4,600 | 4,600 |
| Rock River | 2,900 | 3,050 |
| Teapot Dome | 1,700 | 1,150 |
| Others | 4,500 | 4,650 |
| Total | 81,950 | 77,700 |

### MONTANA

| | | |
|---|---|---|
| Cat Creek | 3,200 | 3,100 |
| Sunburst | 8,850 | 9,050 |
| Total | 12,050 | 12,150 |

### COLORADO

| | | |
|---|---|---|
| Moffats (Craig) | 3,150 | 3,050 |
| Fort Collins | 1,950 | 2,050 |
| Florence | 400 | 400 |
| Others | 500 | 350 |
| Total | 6,000 | 5,850 |

### NEW MEXICO

| | | |
|---|---|---|
| Artesia | 3,500 | 3,300 |
| Hogback | 500 | 500 |
| Rattlesnake | 300 | 200 |
| Total | 4,300 | 4,000 |
| Total Rocky Mountains | 104,300 | 99,700 |

### EASTERN

| | | |
|---|---|---|
| (Including Ill., Ind., Ky., Pa., Ohio, W. Va., and N. Y.) | 100,500 | 100,500 |

### PRODUCTION SUMMARY

| | | |
|---|---|---|
| East of Rockies | 1,223,800 | 1,215,650 |
| United States | 1,947,100 | 1,928,350 |

# Big Order for Export Gasoline Increases Crude Demand

PURCHASE of four million gallons, or 500 cars of high test gasoline for export delivery by Sinclair last Friday from Group 3 and North Texas refiners for delivery over the next 30 days reversed the trend of prices on this commodity on short notice, and cleaned the market of 64-66 gravity gasoline for the time being. The buying orders distributed by Sinclair among independent refiners broke up a dull period of 10 days duration in the gasoline market, and prices prevailing at the time of the purchase were boosted a quarter of a cent when Sinclair offered to pay a flat price of 12½ cents per gallon. About 350 cars are to be furnished by North Texas refiners, and the balance of the order will come from plants in Group 3 territory, according to reports.

Export business has been the mainstay of the Mid-Continent gasoline market since late in October, and prices have been responding quickly to quantity buying. A number of plants, particularly in North Texas where favorable crude is available for making high test motor fuels, have specialized on 64-66 gravity gasoline since the offset of winter. In absorbing a large percentage of the Mid-Continent gasoline production this winter, the exporters have protected the refiners from burdensome stocks and distress market conditions, although plant operations have been maintained close to the normal volume. This condition has been a factor in upholding the demand for light crude.

Domestic demand for gasoline has been somewhat dull since late in December, and the current 9½c quotation on U. S. motor grade is a full cent below the high mark of the season, while the high test gasoline is only a fraction of a cent under the seasonal high mark. A spread of three cents per gallon now exists between the selling price on U. S. motor and high test

gasoline, and due to this wide margin some Mid-Continent refiners have started re-running the heavier ends to make export gasoline. Such a margin is abnormal, and U. S. motor grade is scheduled to go higher rather than for the high test product to give way to lower prices, since exporters have not hesitated to pay from 12¼ to 12¾c for the high test commodity this winter.

Prices on fuel oil continue to recede in North Texas, and drilling rigs, which constitute a large percentage of the demand at present, are being supplied at a saving of about 30 cents per barrel as compared to prices in effect early in December. Burkburnett and Wichita Falls district refiners were quoting $1.25 per barrel early this week, and stocks were plentiful.

Spot crude in North Texas was maintaining a firm position early this week as result of increased demand from local plants, who are seeking to cover on their crude requirements over the next 30 days after having sold their gasoline output for this period to exporters. Spot oil is now commanding a price ranging from $2.22½ to $2.30 per barrel, exclusive of pipe line delivery charges. The lower quotation applies on crude that requires a higher pipe line tariff in making deliveries to refineries.

The crude oil market in Oklahoma is now following the course of last year. Premiums are being paid for crude, while gasoline remains sluggish. In the light oil fields 25 cents is a common premium, both Champlin and the Mid-Continent Petroleum Corporation paying this, but refiners so far have been offering their gasoline on a slow market with 10 cents the common price for navy gasoline. These prices do not compare with those prevailing a year ago, but conditions are similar to a year ago. At that time premium paying crept into the crude oil market while gasoline prices finally sagged. The crude oil market is pleasing only in spots. Where premiums apply, producers are happy. Where premiums are not paid producers look on conditions as unfair. The common hope is for a raise in the posted schedule for Mid-Continent crudes. Major buyers, however, are no doubt being guided by affairs in California. From the quarter of the major buyers there is nothing to indicate any change in posted schedules. Premium paying is not yet sufficient to force the larger buying concerns to raise prices in order to get oil.

# COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

## Summarized Review of Field Results

| State— | Completions This Week | Completions Last Week | Producers This Week | Producers Last Week | Gas Wells This Week | Gas Wells Last Week | Failures This Week | Failures Last Week | Initial Production This Week | Initial Production Last Week |
|---|---|---|---|---|---|---|---|---|---|---|
| Arkansas | 23 | 19 | 12 | 11 | 2 | 2 | 9 | 6 | 1,930 | 1,155 |
| California | 22 | 17 | 19 | 16 | .. | .. | 3 | 1 | 7,652 | 11,742 |
| Colorado | 1 | .. | .. | .. | .. | .. | 1 | .. | .... | ..... |
| Indiana | 1 | 1 | 1 | .. | .. | .. | .. | 1 | 25 | ..... |
| Illinois | 4 | 4 | 4 | 3 | .. | .. | .. | 1 | 210 | 53 |
| Kansas | 35 | 24 | 18 | 14 | 1 | .. | 16 | 10 | 3,110 | 1,975 |
| Kentucky | 17 | 25 | 14 | 13 | 1 | 1 | 2 | 11 | 568 | 131 |
| Louisiana | 11 | 13 | 6 | 8 | .. | 1 | 5 | 4 | 691 | 335 |
| Michigan | .. | .. | .. | .. | .. | .. | .. | .. | .... | ..... |
| Mississippi | .. | .. | .. | .. | .. | .. | .. | .. | .... | ..... |
| Montana | 4 | 5 | 4 | 4 | .. | .. | .. | 1 | 2,685 | 240 |
| New York | 2 | 7 | 2 | 7 | .. | .. | .. | .. | 235 | 24 |
| New Mexico | .. | 3 | .. | 3 | .. | .. | .. | .. | .... | 225 |
| Ohio | 18 | 42 | 16 | 14 | .. | 17 | 2 | 11 | 749 | 154 |
| Oklahoma | 97 | 101 | 49 | 52 | 11 | 14 | 37 | 35 | 5,969 | 9,536 |
| Pennsylvania | 46 | 39 | 39 | 32 | 7 | 6 | .. | 1 | 109 | 102 |
| Tennessee | 1 | .. | 1 | .. | .. | .. | .. | .. | 10 | ..... |
| Texas | 112 | 104 | 64 | 71 | 2 | 7 | 46 | 26 | 11,477 | 16,633 |
| Utah | .. | .. | .. | .. | .. | .. | .. | .. | .... | ..... |
| West Virginia | 28 | 13 | 9 | 7 | 14 | 6 | 5 | .. | 176 | 125 |
| Wyoming | 1 | 15 | 1 | 15 | .. | .. | .. | .. | 50 | 2,140 |
| Totals | 423 | 432 | 259 | 270 | 38 | 54 | 126 | 108 | 35,646 | 44,570 |

NOTE—Following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million cubic feet of gas; abn—abandoned; bbls—barrels; b. s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; lcn—location; m—milling N. S. E. W.—North, South, East, West; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—under reaming; wo—workover; wosr—waiting on standard rig.

## Texas

### ARCHER COUNTY

| Company, Well and Location | Initial Production Bbls. | Depth |
|---|---|---|
| Archer Oil Corp. L. H. Farmer 6-D | * | 1501 |
| Bass-Dillard et al Darilek 6 | 80 | 1417 |
| Bridwell-Gohlke et al L. F. Wilson 9 | * | 1645 |
| Burns-Maxson & Humble O. & R. Co. Ella Brown 2 | 95 | 1585 |
| Camp O. & G. Co. J. D. Farmer 1 | * | 1502 |
| Hazlitt-Simmons Corp. Hutcherson 1 | * | 1430 |
| McCarty Oil Co. L. F. Wilson 17-B | 85 | 900 |
| Magnolia Pet. Co. Cowden-Portwood 6 | 5 | 1421 |
| Cowden-Portwood 7 | 55 | 1405 |
| M. & V. Oil Co. A. M. Kunkel 3 | 115 | 1177 |
| Muse-Robertson et al A. P. Jackson I-B | 25 | 1540 |
| Norday Oil Co. Anderson 5 | 65 | 1419 |
| Pandem Oil Corp. et al Young 4 | 130 | 1442 |
| Hutcherson 5 | 175 | 1401 |
| Petroleum Prod. Co. Portwood 1 | * | 1539 |
| Phillips Pet. Co. Falls County Fee 2 | 5 | 1174 |
| Waite Phillips Co. Lowe 1 | 5 | 1201 |
| T. B. Wilson 4-A | 25 | 1719 |
| T. B. Wilson 9-B | 100 | 1736 |
| T. B. Wilson 10-B | 110 | 1736 |
| L. F. Wilson 2-A | * | 1537 |
| B. O. Sanford et al Cowan 1 | * | 1635 |
| Scott-Gose et al Parrish 9 | 15 | 1583 |
| Shaw-Rathke et al Monohan 12 | * | 1350 |
| Sun Oil Co. W. T. Richardson 8 | 45 | 1453 |
| W. T. Richardson 9 | 50 | 1447 |
| Swastika Oil Synd. Kovar 1 | * | 1493 |
| Texhoma (Continental) O. & R. Co. Kunkel 1-A | * | 1185 |
| Abercrombie-Taylor 3 | 20 | 1354 |
| Wichtex-Dixie Oil Co. A. P. Jackson 4 | * | 1565 |

### BROWN COUNTY

| Company, Well and Location | Initial Production Bbls. | Depth |
|---|---|---|
| Bateman-Campbell et al Gaines 1 | * | 2760 |
| J. S. Cosden et al Westerman 4 | 200 | 1299 |
| Danciger-Englewright et al L. V. Eddington 1 | 35 | 1242 |
| McCarter et al Leatherwood 1 | 5 | 1235 |
| Mulloy-Chandler et al Prather 4 | 30 | 1313 |
| Prairie O. & G. Co. G. B. Gaines 12 | 85 | 1271 |
| Simms Oil Co. G. B. Gaines 5 | 65 | 1267 |
| Stone & Co. Gunn 5 | ¶1 | 1211 |
| Thompson-Green et al Ward 1 | † | 1589 |

### CALLAHAN COUNTY

| Company, Well and Location | Initial Production Bbls. | Depth |
|---|---|---|
| Prairie O. & G. Co. E. J. Euabnks 3 | 15 | 323 |

### SHACKELFORD COUNTY

| Company, Well and Location | Initial Production Bbls. | Depth |
|---|---|---|
| Roberts-Chadwick & Payne et al Dowell 1 | 5 | 292 |

### STEPHENS COUNTY

| Company, Well and Location | Initial Production Bbls. | Depth |
|---|---|---|
| Carter-Thomasson et al Polan 1 | * | 3660 |
| Chastain-Outlaw et al Young 1 | * | 2300 |
| States Oil Corp. Cooper 3 | 55 | 3714 |
| Swensondale Oil Co. Echols 1 | * | 4180 |

### MONTAGUE COUNTY

| Company, Well and Location | Initial Production Bbls. | Depth |
|---|---|---|
| Pure Oil Co. Maddox 2-A | 55 | 965 |

### YOUNG COUNTY

| Company, Well and Location | Initial Production Bbls. | Depth |
|---|---|---|
| Bridwell-Heydrick & Clark Boren 3 | 125 | 1080 |
| Consolidated Oil Co. Hall 1 | * | 1101 |
| Plains Prod. Co. Butler 1 | * | 1105 |
| The Texas Co. Boren 5 | 100 | 1081 |
| Texas Unity Oil Co. Campbell 1 | * | 1103 |

### BURKBURNETT

| Company, Well and Location | Initial Production Bbls. | Depth |
|---|---|---|
| Magnolia Pet. Co. Hugh Reilly | 126 | 522 |
| McCracken et al S. A. Waits 1 | * | 1416 |

### BAYLOR COUNTY

| | | |
|---|---|---|
| British-American Oil Co. Haggard 1 | * | 2005 |
| W. J. Green et al Shelly 1 | * | 1560 |
| Petroleum Prod. Co. Mills 6 | 35 | 1412 |
| Mel Richards et al Whitworth 1 | * | 1402 |

### ELECTRA

| | | |
|---|---|---|
| Apple-Brandeberry et al Fisher 1. | * | 2004 |
| Empire Gas & Fuel Co. Pierce Pet. Fee 16 | 10 | 1508 |
| Pink Hammond et al Burnett 1-B | * | 2002 |
| Wayne Hammon et al Waggoner 7-B | * | 1745 |

### K-M-A AND IOWA PARK

| | | |
|---|---|---|
| R. R. Clark et al Chilson 4 | 7 | 694 |
| Duffy & Loofbourrow et al Schroeder 1 | * | 2010 |
| Pat and Tom White et al Olds 2 | * | 1967 |

### SOUTH VERNON

| | | |
|---|---|---|
| Barkley-Meadows et al Stephens 2-B | 250 | 2374 |
| Stephens 3-B | 100 | 2373 |
| Continental Oil Co. Zipperle 8 | 10 | 1820 |
| Culbertson-Orth et al Berry 1 | † | 2080 |
| Humble O. & R. Co. Stephens 39 | 275 | 2380 |
| Waggoner 4-H | 130 | 1873 |
| Landreth Prod. Corp. Waggoner 10-D | 150 | 1886 |
| McCamey-Sherrin & Lucey Stephens 28 | 165 | 2332 |
| Stephens 29 | 150 | 2086 |
| Roeser-Pendleton et al Waggoner 1-B | * | 2250 |

### CENTRAL TEXAS

| | | |
|---|---|---|
| **Mexia—** | | |
| Pure Oil Co. Kandrick 15 | 125 | 3020 |
| **Currie—** | | |
| Brothers Oil Co. R. V. Bounds 2 | 90 | 3200 |
| **Richland—** | | |
| The Sun Co. E. Swink 1-A | ¶ | 2975 |

### GULF COAST

| | | |
|---|---|---|
| **Spindletop—** | | |
| Lillian Oil Co. Terrel 2 | 75 | 950 |
| W. B. Flynn Gladys 1 | * | 1200 |
| **Batson—** | | |
| Acorn Oil Co. Paraffine 58 | * | 610 |
| **Sour Lake—** | | |
| The Texas Co. Fee 270, wo | 8 | 2100 |
| Yount Lee Oil Co. Gilbert 2 | 2500 | 4210 |
| Primrose Oil Co. Finklestein 1, wo | 12 | 1780 |
| **Hull—** | | |
| Mecom Oil Co. Taylor 8, wo | * | 4480 |
| Yount-Lee Oil Co. Merchant 12, wo | * | 2800 |
| Gulf Prod. Co. Phoenix Dev. Co. | 1200 | 2790 |
| Phoenix Dev. Co. 63 | 300 | 3375 |
| **Orange—** | | |
| Edgerly Petroleum Co. Carbello 11, wo | 30 | 3440 |
| Carbello 11-B | 10 | 3400 |
| The Sun Co. Belile 3 | * | 5180 |
| **High Island—** | | |
| The Sun Co. Cade 6, wo | 35 | 3330 |
| Lockhart 7 | * | 560 |
| **Goose Creek—** | | |
| Gulf Pro. Co. Wright 10-A, wo | 50 | 2860 |
| Gulf Coast Oil Corp. Gaillard 9, 21 Acres, wo | 50 | 2590 |

### TEXAS MISCELLANEOUS

| | | |
|---|---|---|
| **Mirando—** | | |
| O. W. Killam Martinez 30 | 100 | 2077 |
| Martinez 32 | 200 | 2120 |
| Morgan & Gibble de la Garza 4 | ¶ | 2103 |
| Cole Pet. Co. Benavides 12 | ¶ | 1725 |
| Magnolia Pet. Co. Ochoa 18 | 80 | 1765 |
| O. W. Killam de la Garza 1 | ¶ | 2083 |
| Ball et al Puig 6 | 30 | 1740 |
| Puig 8 | 60 | 1732 |
| Moody-Seagraves de la Garza 1 | ¶ | 2090 |

### SOUTH LOUISIANA

| | | |
|---|---|---|
| **Lockport—** | | |
| Vacuum-Gulf Farquahar et al 2-A | * | 3650 |

## California

| Company, Well and Location | Initial Production Bbls. | Depth |
|---|---|---|
| **Long Beach—** | | |
| Barry Oil Co. No. 3 | 350 | 4450 |
| Brawley-Slade-Sweet Cerritos 1 | 350 | 4354 |
| Craig Burns Oil Co. No. 6 | 200 | 4380 |
| A. T. Jergins Trust No. 17-A | 290 | 4375 |
| Lakeview Oil Co. No. 1 | 350 | 4385 |
| Kinney & McKrate No. 2 | 300 | 4365 |
| McAlpine-Craig-Wilbur's Cerritos 1 | 450 | 4465 |
| McKeon Oil Co. Cerritos 1 | 400 | 4405 |
| Robertson Co. Cerritos 4 | 600 | 4450 |
| Royal Oil Co.'s Cerritos 1 | 250 | 4455 |
| Umpire Pet. Co. No. 2 | 150 | 4450 |
| No. 4 | 150 | 4498 |
| **Athens-Rosecrans—** | | |
| Barnsdall Oil Co. O'Dea 9 | 1500 | 4153 |
| W. H. Fisher No. 18 | 490 | 5235 |
| **Baldwin Hills-Inglewood—** | | |
| Pacific Oil Co. Baldwin 15 | 1400 | 2145 |
| **Torrance—** | | |
| C. C. M. Oil Co.'s Del Amo 40 | 250 | 3670 |
| California Pet. Corp.'s Brown 1, wo | 116 | 3455 |
| **Newport-Costa Mesa—** | | |
| Julian Pet. Corp.'s Mesa 5 | 50 | 560 |
| **Seal Beach—** | | |
| Associated Oil Co. Beal Beach 1 | * | 2502 |
| **El Segundo—** | | |
| Pan American Pet. Co. Pacific Southwest 2 | * | 4000 |
| **Fairview—** | | |
| Western Ref. Co. Adams 1 | * | 140 |
| General Pet. Corp.'s Government 6 | 6 | 2410 |

## Louisiana

| | | |
|---|---|---|
| **Caddo Parish—** | | |
| Dixie Oil Co. Robertshaw 70, 14-21-15 | 6 | 1723 |
| Gulf Ref. Co. Ferry Lake 223, 16-20-16 | 85 | 2287 |
| The Texas Co. Federal-Jeems Bayou 1, 15-20-16 | * | 3628 |
| Total, 3 wells | 91 | |
| **Monroe Gas Field—** | | |
| Carson Carbon Co. Woodley 1, 4-19-5e | * | 2180 |
| **Urania District, La Salle Parish—** | | |
| O. W. Clarke Tullos 1, 23-10-1e | 100 | 1503 |
| Gould-Monroe Drlg. Co. Tullos 1, 23-10-1e | 100 | 1503 |
| Keen & Woolf Urania Lumber Co. 2, 19-10-2e | 50 | 1558 |
| Louisiana Oil Ref. Corp. Tremont Lumber 2, 29-10-2e | * | 1604 |
| Natural Gas & Fuel Corp. Tullos 2, 25-10-1e | 350 | .... |
| Total, 5 wells | 600 | |

### EAST TEXAS COMPLETIONS

| | | |
|---|---|---|
| **Panola County—** | | |
| J. C. McCormack Horton 1, H. Anderson H/R survey | 10 | 2030 |

## Arkansas

| | | |
|---|---|---|
| **Irma Field, Nevada County—** | | |
| Steele et al's Wallace 1, 11-14-21 | * | 1236 |
| **Smackover Field, Ouachita County—** | | |
| Hale et al Fincher 1, 29-15-16 | * | 2292 |
| Humble O. & R. Co. Jones-Umstead 6, 4-16-15 | 300 | 2353 |
| Roxana Pet. Co.'s Reynolds 1, 27-15-15 | * | 2612 |
| Simms Oil Co. Hildebrand 5, 28-15-15 | 250 | 2100 |
| Standard Oil Co. Griffin 9, 33-15-15 | * | 2383 |
| Powell 5, 34-15-15 | * | 2385 |
| Umstead 31, 32-15-15 | 130 | 2397 |
| Sun Co. Johnson 5, 30-15-15 | * | 2608 |
| Superior Oil Co. Flenniken 3, 6-16-15 | 200 | 2568 |
| The Texas Co. Berry 14, 33-15-15 | * | 2386 |
| **Smackover Field, Union County—** | | |
| Crown Central Oil & Ref. Co. Murphy 7, 8-16-15 | 250 | 2516 |
| Keen & Woolf Oil Co. Murphy 4, 9-16-15 | ¶20 | 2718 |
| Lion Oil & Ref. Co. Graves 9, 3-16-15 | ¶20 | 2616 |
| LeCroy 2, 16-16-15 | 55 | 2651 |
| Murphy A-13, 7-16-15 | 225 | 2413 |
| Murphy C-10, 8-16-15 | 250 | 2503 |
| Natural Gas & Pet. Corp. Ballard 5, 15-16-15 | 50 | 2589 |
| Harrell A-3, 17-16-15 | 200 | 2670 |
| Standard Oil Co. Alphin 23, 3-16-15 | 20 | 2555 |

## Kansas

| Company, Well and Location | Initial Production Bbls. | Depth |
|---|---|---|
| **Butler County—** | | |
| Skelly Oil Co. Drohen 1, NEc 14-25-3 | 20 | 2700 |
| Lewis Oil Co. Palmer 1, SWc NE 32-26-6 | 25 | 2794 |
| Phillips Pet. Co. Kruse 1, NEc NW 27-26-7 | 600 | 2750 |
| Greenland Oil Co. Jobe 1, SEc 28-27-7 | 175 | 2754 |
| Balliere et al Simpson 1, NEc SW 1-28-7 | * | 3250 |
| **Cowley County—** | | |
| Marland Oil Co. Holman 2, NEc SW 19-33-3 | 60 | 3205 |
| W. Phillips & Marland, Bryan 2, NWc SW SE 21-33-3 | 70 | 3299 |
| Roxana Pet. Corp. Kimmell 1, NEc SW NW 22-34-3 | * | 3290 |
| **Elk County—** | | |
| Abel & Byington, Finley 4, NWc SW SE SE 15-31-11 | ¶1½ | 939 |
| Sharpless et al Gibson 1, SWc NW SE 23-28-11 | * | 2104 |
| Theta Oil Co. Hawkins 1, SWc NE NW SE 34-29-12 | * | 2007 |
| **Greenwood County—** | | |
| Empire G. & F. Co. Ateyc 1, NEc NW 6-22-10 | 475 | 2260 |
| Sinclair O. & G. Co., Browning 32, NWc NE SW 20-22-10 | 150 | 2288 |
| Titus et al, Prather 21, NEc NW 29-22-10 | 300 | 2333 |
| Empire G. & F. Co. Bartlett 4, SWc SE SE 15-22-11 | 5 | 1928 |
| Greenland Oil Co. Taylor 3, SWc NW SW 25-23-8 | 250 | 2532 |
| Shambaugh 5-A, NWc SE NE 2-23-9 | 100 | 2426 |
| Green 19, NWc SE SE 10-23-9 | 50 | 2334 |
| Leeward Pet. Co. Hill 2, NEc SE NE 27-24-9 | 45 | 2206 |
| Paul Smith et al Freeman 1, SEc NW 19-24-11 | 20 | 1862 |
| Ward McGinnis, Wiggins 1, SEc NW 30-24-11 | 500 | 1813 |
| Empire G. & F. Co., Greenwood 2, SEc SW SE 19-22-11 | * | 2234 |
| Phillips Pet. Co. Coffman 3, SWc NW NE 30-22-11 | * | 2265 |
| Reeser et al Wasson 1, NWc 33-22-12 | * | .... |
| Murphy et al Green 8, NWc SW 2-23-9 | * | .... |
| **Kingman County—** | | |
| Phillips Pet. Co. Bane 1, C NW 22-29-6 | * | 4710 |
| **Lyon County—** | | |
| Swartz et al Jones 4, NWc SW NE 31-21-12 | * | .... |
| Jones 3, NWc NE SW SE 31-21-12 | * | .... |
| **Marion County—** | | |
| Watchorn Oil & Gas Co. Townsend 42, SEc NW SE 5-22-4 | 5 | 2497 |
| Brennan & Wixon Robinson 1, NEc NW 31-20-5 | * | 2531 |
| Sheedy et al, Allison 3, SWc SE SE 13-21-4 | * | 2415 |
| **Sumner County—** | | |
| Phillips Pet. Co. Holt 1, NEc SE 24-33-2 | 260 | 3219 |
| Champlin Ref. Co. Stevenson 1, SEc SW SE 9-30-1 | * | 5307 |
| Lotts 1, SEc NW NE 8-20-2 | * | 4153 |
| Shawver et al Roselle 1, SWc 35-34-1 | * | 3871 |

## Oklahoma

| | | |
|---|---|---|
| **Carter County—** | | |
| Twin State Oil Co. Carpenter 1, C SE NE NW 22-2-2 | 200 | 3092 |
| Cemeron-Noble Watkins 2, C SE NE NW 8-3-2 | 100 | 3148 |
| Amerada Pet. Corp. Ledbetter 2, NWc SE NW NW 34-5-1 | 17 | 1216 |
| **Comanche County—** | | |
| Magnolia Pet. Co. Price 5, NEc SE SW NE 30-2-9 | 5 | 2059 |
| Carter Oil Co. Indian 1, C NW NE SE 30-2-9 | 4 | 2040 |
| **Cleveland County—** | | |
| Garr Oil Co. Holland 1, NEc SE 21-10-4 | * | 2620 |
| **Creek County—** | | |
| Atlantic Oil Prod. Co. Johnson 6, C E L SW SE 14-17-8 | 60 | 2281 |

| Company, Well and Location | Initial Producers Bbls. | Depth |
|---|---|---|
| Olean Pet. Co. Washington 6, C N L S½ NW SW 32-17-8 | 40 | 2385 |
| Skelly Oil Co. McKann 10, SEc NE SW 12-14-8 | 50 | 2412 |
| Texas Co. Bruner 2, NWc SW SE 1a-14-8 | 50 | 2393 |
| Beaver 4, SEc SW NW 13-14-8 | 10 | 2457 |
| C. G. Tibbens Francis 3, SEc NE 14-14-8 | 10 | 2392 |
| Billingslea Fields 1-A, NWc SW 7-18-9 | ¶8 | 2403 |
| J. H. Wright Holder 2, NWc SE SE 23-17-10 | 25 | 2496 |
| Ireland et al Freeman 3, SEc SW SE 8-17-11 | 130 | 2478 |
| Dean & Wickers Cumsey 1, NEc SE SE 10-17-11 | 10 | 1651 |
| J. H. Rebold Clark 1, NEc SW SW 22-15-10 | 75 | 2687 |
| Wilcox O. & G. Co. Kimble & Reading 12, SWc NE 20-14-10 | 100 | 3367 |
| C. G. Tibbens Watley 1, SWc SE 25-15-8 | * | 2477 |
| Dick B. Mason Doyle 1, SEc NW NE 21-17-9, owd | * | 3335 |
| Bright 1, SEc SW NW 36-17-9 | * | 1398 |
| Edgerton et al Bittle 1, NWc NE 1-17-11 | * | 2346 |
| **Grady County—** | | |
| Briscoe & Hall Hill 2, Swc 25-5-8 | ¶46 | 2410 |
| Magnolia Pet. Co. Farwell 5, SWc SE 26-5-8 | ¶28 | 2400 |
| Okla. Nat. Gas Co. Dryden 1, C SW NW 2-4-8 | ¶13 | 2350 |
| Carter Oil Co. Schramack 1, SEc SW SW 35-3-5 | 36 | 1494 |
| Garvin Drlg. Co. Lindsey 1, SWc SE NE SW 35-3-5 | 100 | 1505 |
| Carter Oil Co. Pursley 1, C SW SW 26-4-6, owd | * | 3850 |
| **Garvin County—** | | |
| Simms Oil Co. Deryden 1, SEc SW NW 18-1-3 | * | 2720 |
| **Garfield County—** | | |
| Sinclair O. & G. Co., Walker (South) 26, C NW NW SE 24-22-4 | * | 5423 |
| Imo Oil Co. Heim 8, NWc SW SW NW 36-22-4 | * | 2620 |
| **Kay County—** | | |
| Polling & Denny Case 2, SWc 4-27-1w | 125 | 3452 |
| Harris & Hahn Brown 2, C NE SW 9-27-1w | ¶47 | 3443 |
| Texas Co. Davis 14, C NE SW SW 27-25-1 | 319 | 4255 |
| Comar Oil Co. School land 1, C NW NW SE 36-25-1 | ¶5 | 822 |
| Simms Oil Co. School land 1, C NE NE SW 33-28-1 | * | 3531 |
| Mid-Continent Pet. Corp. School land 1, C SW SW SE 36-27-2 | * | 3765 |
| School land 1, SEc NE 16-25-2 | * | 4185 |
| School land 2, C SW SE NE 16-25-2 | * | 4270 |
| Marland Oil Co. School land 5, C NW NE SE 16-25-2 | * | 3662 |
| School land 6, NEc NW SE 16-25-2 | * | 4304 |
| Birdsell 1, NWc NW NE 22-25-2 | * | 3738 |
| Mid-Cont. Pet. Corp. School land 1, C NE NE SW 33-25-2 | * | 4188 |
| **Lincoln County—** | | |
| Gypsy Oil Co. Caves 3, C SE SW SE 35-15-5 | 250 | 3394 |
| Caves 4, C SW NW SE 35-15-5 | 510 | 3415 |
| Magnolia Pet. Co. Sukovaty 11, SEc NW 2-14-5 | 420 | 3377 |
| Sukovaty 16, SEc NE SW 2-14-5 | 700 | 3382 |
| Thomson 2, SEc NE 4-14-5 | 273 | 3469 |
| The Texas Co. Strough 1, NEc SE 4-14-5 | 320 | 3467 |
| **Muskogee County—** | | |
| W. F. Meagher Smith 4, NWc SW 14-15-15 | * | .... |
| **Okmulgee County—** | | |
| Okla. Nat. Gas Co. Tiger 4, SEc SW NE SE 24-16-12 | 100 | 2247 |
| T. A. Johnson Havercamp 2, SWc NW 22-14-12 | 120 | 1970 |
| Morton & Co. Wilson 5, SWc NE 7-12-12 | 25 | 2571 |
| M. C. French Summers 1, SEc NE NE 17-11-12, owd | 5 | 2085 |
| Empire G. & F. Co. Sullivan 9, NWc SW NW 19-11-12 | ¶6 | 3469 |
| Sinclair O. & G. Co. Jefferson 9, C NE 23-15-14 | 5 | 1721 |
| Devonian Oil Co. Field 6, SWc SE SW 7-15-13 | 100 | 2684 |
| Blakely Oil Co. Hawkins 1, SWc SE SW 9-15-13 | ¶2 | 1960 |
| W. B. Pine Doyle 6, C N L NE NW 18-15-13 | 100 | 2715 |
| Wick Pet. Co. Stephens 6, SEc NW SW 10-14-14, owd | 10 | 1240 |
| J. E. Wallace Colbert 2, NEc NW NW 14-14-14 | 20 | 1135 |
| J. E. Haas Colbert 9, C S½ NW 15-14-14, owd | 15 | 1514 |
| Clarion Oil Co. Harris 6, NWc NE 12-14-13 | * | 2431 |
| Turner et al Korndorfer 1-A, SWc NW SE SW 19-16-13 | * | 2280 |
| **Okfuskee County—** | | |
| Anglo Texas Oil Co. & North Baltimore Oil Co., Sugar 4, NWc SW NE 13-12-11, owd | 700 | 3352 |
| Olean Pet. Co. Wind 2, NWc SW SE 36-11-9 | ¶12 | 3670 |
| **Osage County—** | | |
| Winona Oil Co. No. 5, C E L SE 20-29-9 | 25 | 1551 |
| L. C. Duffield No. 16, SWc NW SW SW 35-29-10 | 10 | 1768 |
| Osage Arrow No. 19, SWc NE SE SE 14-22-10 | 15 | 1748 |
| Okla. Nat. Gas Co. No. 707, SWc SE SW SE 2-21-10 | ¶3¼ | 1571 |
| Phillips Pet. Co. No. 1, SWc NW 8-27-6 | * | 3020 |
| **Pawnee County—** | | |
| Magnolia Pet. Co. Miller 8, C SE SW NW 4-22-3 | 635 | 4103 |
| Shelby O. & G. Co. & Gypsy Oil Co. Armstrong 1-A, SEc 35-21-7 | 50 | 2367 |
| Minnehoma Oil Co. Vowell 8, NEc NW NW 9-20-8 | 35 | 2803 |
| Dixie Oil Co. Nielson 1-A, NWc SE SW 27-21-8, owd | * | 3143 |
| Johnson Oil & Ref. Co. Imhoff 2, NEc NW SE 25-20-79 | * | 3612 |
| **Payne County—** | | |
| Carter Oil Co. Harlow 2, SEc NW NE 18-18-5 | * | 1643 |
| **Pontotoc County—** | | |
| LaSalle et al Lewis 1, SEc NE 31-5-5 | * | 1980 |
| **Sequoyah County—** | | |
| Eureka Oil & Gas Co. Powell 1, C SW NW 33-11-25 | * | 4200 |
| **Seminole County—** | | |
| J. W. McCullough Brown 1, C SE SW NW 27-8-8 | ¶15 | 3238 |
| **Stephens County—** | | |
| Illinois-Oklahoma Pet. Co. Brown 3, SEc SW SE NE 26-1-9 | ¶1 | 1998 |
| McMann Oil Co., Stephens 9, NWc NE SW NW 33-1-8, owd | 35 | 2259 |
| Brannon et al Hanson 1, SWc NW 35-1-8 | 2 | 2225 |
| Magnolia Pet. Co. Ziegler 17, C SW SE SW 34-1-5 | 14 | 1220 |
| Humble Oil & Ref. Co. Lindsey 1, SWc NE 1-2-4 | * | 2926 |
| Shaffer & Mangan, Talley 1, SEc 3-1-5, owd | * | 2300 |
| Commercial Pet. Co. Fobb 1-a, SEc NE SE SW 12-2-8 | * | 1790 |
| Mid Kansas Oil & Gas Co. Isaacs 7, C SW NE SW 19-2-7 | * | 1867 |
| Magnolia Pet. Co. Brown 2, C NW NW NE 3-2-5 | * | 3335 |
| Holden 1, C W L SW NE 14-2-5 | * | 2610 |
| **Tillman County—** | | |
| C. & O. Drlg. Co., Dougherty 1, C SE SE SE 33-4-15 | * | 2340 |
| **Tulsa County—** | | |
| Sand Springs Home London 4, C E L SW SE 13-19-11 | * | 2190 |
| S. L. Johnson, Grayson 1, SEc SW SE 4-19-14 | * | 1920 |
| Wilson et al Cheney 1-A, NEc 28-18-13 | * | 1716 |
| Holmes et al Fox 1, SEc NW 14-16-13 | * | 2381 |
| **Wagoner County—** | | |
| H. C. Deems Sarty 6, NEc SW SW 31-18-13 | 10 | 1280 |

# Mountain States

## WYOMING

| Company, Well and Location | Initial Producers Bbls. | Depth |
|---|---|---|
| **Salt Creek—** | | |
| Texas Production Co. No. 6-A, SE¼ 19-40-78 | 50 | 2701 |

## MONTANA

| Company, Well and Location | Initial Producers Bbls. | Depth |
|---|---|---|
| **Kevin-Sunburst—** | | |
| Ohio Oil Co.'s No. 7-M, 30-55-1 | 100 | 1457 |
| Treasure Oil Co. No. 2-B, NW¼ 25-35-2 | 160 | 1624 |
| BC-Montana Oil Co. No. 5-S, SE¼ 25-32-2 | 25 | 1450 |
| Fulton Oil Co. No. 8-B, NW¼ 31-35-1 | 2400 | 1451 |

## NEW MEXICO

| Company, Well and Location | Initial Producers Bbls. | Depth |
|---|---|---|
| **Artesia—** | | |
| Ohio Oil Co.'s No. 4, 17-18-28 | 75 | 2360 |
| **Rattlesnake—** | | |
| Continental Oil Co. No. 3, 3-27-17 | 260 | 1335 |

## COLORADO

| Company, Well and Location | Initial Producers Bbls. | Depth |
|---|---|---|
| **Fort Collins—** | | |
| Ho-Bart Oil Co. No. 1 NE¼ 32-8-68 | * | 5701 |

# Eastern States

## PENNSYLVANIA

| Company, Well and Location | Initial Producers Bbls. | Depth |
|---|---|---|
| **Bradford Field—** | | |
| C. B. Kirvin Baldwin 1 | 4 | .... |
| T. H. Kirvin Jr. D. C. & B. tract 1 | 4 | .... |
| A. E. Yahn Burns 10 | 4 | .... |
| Petroleum Reclamation Co. Pratt 11 | 4 | .... |
| Associated Producers Co. Bingham 159 | 4 | .... |
| V. & E. E. Schermerhorn Schermerhorn 21 | 3 | .... |
| R. C. Loyd Ekas 5 | 3 | .... |
| Hope Oil Co. Sill 2 | 3 | .... |
| S. J. Sprague Sprague 1 | 3 | .... |
| G. M. C. Coal Co. Wright 1 | 3 | .... |
| H. M. & J. Jack, Jack 1 | 3 | .... |
| Denwood Oil Co. Garlock 3 | 3 | .... |
| L. G. Dana Dana 17 | 3 | .... |
| W. C. Kennedy Co. Kennedy 52 | 3 | .... |
| Hazlewood Oil Co. Bingham 37 | 3 | .... |
| Hooker Estate Hooker 5 | 3 | .... |
| Dunleavey Bros. & Curtis Dunleavey 19 | 3 | .... |
| D. W. Daly Bingham 389, tract 41 | 3 | .... |
| F. S. Boquin Boquin 1 | 3 | .... |
| J. L. Yerden Bingham 1 | 4 | .... |
| C. E. Piper Borden 1 | 3 | .... |
| T. P. Thompson Gelpin 1 | 3 | .... |
| Kahle Oil Co. Norton 1 | 3 | .... |
| **Venanago County—** | | |
| C. & L. Roess Trust Estate McCalmont 21 | 2 | .... |
| Jacob Sheasley Rice 4 | 2 | .... |
| Citizens Banking Co. Farringer 1 | 2 | .... |
| L. E. Riddle & Co. Riddle 1 | 2 | .... |
| Thompson & Rice, Osmer 2 | 2 | .... |
| Franklin Trust Co. Sutton-Foster 13 | 2 | .... |
| Renfrow, Helper & Co. Fisher 28 | 2 | .... |
| **Greene County—** | | |
| Carnegie Natural Gas Co. Caleb & Lydia Stewart 2 | ¶3 | .... |
| George Plants 3 | ¶2 | .... |
| Walton Delaney 1 | ¶2 | .... |
| Garrison & Co. Hannah M. Sough 1 | ¶2 | .... |
| Peoples Nat. Gas Co. Noah L. Hines 1 | ¶2 | .... |
| Natural Gas Co. of W. Va., Lewis Powell 3 | ¶4½ | .... |
| **Butler County—** | | |
| Harvey Snow Simons 1 | 3 | .... |
| William Sammins & Co. Frainheiser 1 | ¶1¼ | .... |
| E. C. Griffith Griffth 1 | 2 | .... |
| Byers & Son Byers 7 | 2 | .... |
| **Center-Middle Field—** | | |
| F. J. Moser, Lot 3767, tract 28 | 2 | .... |
| **Allegany County—** | | |
| State Bank of Bolivar & Co. Fee 1 | 2 | .... |

| Company, Well and Location | Initial Producers Bbls. | Depth |
|---|---|---|
| William Bartoo Bartoo 1 | 2 | .... |
| Bert Maitland & Co. Maitland & Co. 61 | 2 | .... |
| F. W. Forness Jr. Forness 1 | 2 | .... |
| C. C. Brennan & Co. Brennan 1 | 2 | .... |
| Empire Gas & Fuel Co. Empire 3 | 2 | .... |
| **WEST VIRGINIA** | | |
| **Ritchie County—** | | |
| Mellon Oil Co. Conaway 4 | 30 | .... |
| J. S. Little & Co. R. R. Kerns 1 | * | .... |
| Big Four Drilling Co. J. Shuman 1 | * | .... |
| Pittsburgh & West Virginia Gas Co. R. A. Thompson 1 | ¶1¼ | .... |
| Hope Natural Gas Co. William Jett 1 | ¶1½ | .... |
| D. M. Heckert Phoebe Williams 1 | ¶¼ | 1829 |
| Hope Construction & Ref. Co. C. Flannagan 18 | 10 | .... |
| Ira Williams & Co. West Virginia tract 30 | 2 | .... |
| Astron & Co. Herman Sturnberg 1 | * | .... |
| **Clay County—** | | |
| Virginian Gasoline & Oil Co. J. B. Castro 260-acres 9 | 30 | .... |
| J. B. Castro 260-acres 10 | 35 | .... |
| Goshorn-Brown 1 | 40 | .... |
| South Penn Oil Co. O. D. Stockley 9 | 20 | .... |
| **Monongalia County—** | | |
| South Penn Oil Co. Mahala Tennant 3 | ¶2 | .... |
| Noah Bremer 2 | ¶2 | .... |
| Moore-Tex Oil Co. J. R. Moore 1 | ¶½ | 1829 |
| **Pleasants County—** | | |
| Big Bend Oil Co. Susan Calvin 2 | 7 | .... |
| Monongahela Oil Co. Dora Wagner 14 | 2 | .... |
| **Harrison County—** | | |
| Standard Gas Co. W. F. West 1 | ¶2 | .... |
| Clarksburg Light & Heat Co. A. J. Sheets 1 | ¶2 | .... |
| **Wetzel County—** | | |
| Manufacturers Light & Heat Co. Jason Lemasters 1 | * | .... |
| D. Hostattler 1 | ¶2½ | .... |
| **Marion County—** | | |
| Funk & Co. W. O. Mayne 1 | ¶2 | .... |
| **Lincoln County—** | | |
| Hope Natural Gas Co. Nancy Hodge 1 | ¶1 | .... |
| **Putnam County—** | | |
| Grant Gas Co. Lee Dent heirs 1 | ¶2½ | .... |
| **Gilmer County—** | | |
| Pittsburgh & West Va. Gas Co. Roy Davis 1 | ¶2 | .... |
| **Cabell County—** | | |
| Aetna Oil & Gas Co. William Kirtley 1 | ¶¼ | .... |
| **Lewis County—** | | |
| Pittsburgh & West Va. Gas Co. J. A. Rollyson 1 | * | 3424 |
| **KENTUCKY** | | |
| **Lawrence-Johnson Counties—** | | |
| Union Gas & Oil Co. C. E. Frailey 10 | 5 | .... |
| R. N. Sparks 4 | 5 | .... |
| Indian-Tex Petroleum Co. J. C. Gilliam 5 | 10 | .... |
| **Owensboro District—** | | |
| White Plains Oil & Gas Co. Allen Brown 1 | 10 | .... |
| Leeper Oil Co. E. Barlow 7 | 6 | .... |
| **Johnson-Magoffin Counties—** | | |
| New Domain Oil & Gas Co. Gardner 13 | 7 | .... |
| Carter Oil Co. W. M. Salyer 4 | 5 | .... |
| **Barren County—** | | |
| Lew J. Emery Jr. Sons Co. Depp-Greer 20 | 6 | 380 |
| Houchins Oil Co. Traube 4 | * | 500 |
| **Warren County—** | | |
| Edward Thesson Moulder 1 | 2 | 587 |
| Hodge & Smith E. Morehead 2 | 3 | .... |
| **Wayne County—** | | |
| P. H. Kennedy J. B. Stevenson 2 | 2 | .... |
| Bowden Oil Co. G. W. Burnell 1 | * | .... |
| **Adair County—** | | |
| Harsh & Wood Brockman 1 | 500 | 245 |
| **Estill County—** | | |
| C. O. Amsler Reed 2 | 5 | .... |
| **Allen County—** | | |
| W. Pruitt Hall Bettie Erwin 14 | 2 | 278 |
| **Floyd County—** | | |
| American Roller Mills Co. Summitt Area 20 | ¶2½ | .... |
| **TENNESSEE** | | |
| **Overton County—** | | |
| A. H. Heisey Gas Co. Robbins 1 | 10 | 1800 |
| **SOUTHEASTERN OHIO** | | |
| **Washington County—** | | |
| Charles D. Schramm & Co. W. L. Schramm 1 | 8 | .... |
| L. A. Phillips & Co. Thomas Driscoll 4 | * | .... |
| **Morgan County—** | | |
| The Pure Oil Co. R. E. Hughes 5 | 15 | .... |
| **Harrison County—** | | |
| Mrs. L. R. Westgate Hanbrake 5 | * | .... |
| **CENTRAL OHIO** | | |
| **Licking County—** | | |
| Ed. H. Everett Co. Margaret E. Wilhelm 2 | 195 | .... |
| Milard F. Romine 4 | 170 | .... |
| Hope Const. & Ref. Co. W. H. Cornell 1 | 53 | .... |
| Hazlett, Glass & Co. Austin Orr 1 | 3 | .... |
| **Holmes County—** | | |
| East Ohio Gas Co. W. H. Uhl 4 | 80 | .... |
| John W. Patterson 1 | * | .... |
| The Pure Oil Co. Garnot Miller 4 | 57 | .... |
| **Hocking County—** | | |
| Gordon Oil Co. George Anthony 3 | 50 | .... |
| Ohio Fuel Supply Co. James Huggins 1 | 50 | .... |
| Hope Construction & Ref. Co. W. H. Mercer 1 | 6 | .... |
| **Fairfield County—** | | |
| Frederick Sharpnack & Co. J. G. Ruff 1 | 25 | .... |
| Baker Oil & Gas Assn. Russell Baker 1 | 2 | .... |
| **Knox County—** | | |
| Ohio Fuel Supply Co. R. Niederhouse 1 | 35 | .... |
| **Coshocton County—** | | |
| Spindler, Doman & Co. W. J. Wolford 1 | * | .... |
| **INDIANA** | | |
| **Pike County—** | | |
| Murphy Oil of Pa. Stewart Bros. 1 | 25 | 986 |
| **ILLINOIS** | | |
| **Wabash County—** | | |
| Mt. Carmel Oil Co. F. M. Leek 2 | 10 | 1386 |
| F. M. Leek 3 | 85 | 1410 |
| Joseph S. Young Interests H. A. Fox 5 | 45 | 1440 |
| **Clark County—** | | |
| Trenton Rock Oil & Gas Co. William Howard 3 | 70 | 1605 |

# WILDCATS FROM ALL SECTIONS

## East Central Texas Wildcats

### COMPLETIONS

| Company, Well and Location | Initial Producers Bbls. | Depth |
|---|---|---|
| **Anderson County—** | | |
| Elkhart Prod. Co. Mack Lynn 1 | * | 2412 |
| **Falls County—** | | |
| Mook-Texas Oil Co. et al J. Woodruff 1 | * | 3205 |
| **Freestone County—** | | |
| Humble O. & R. Co. Finch 1 | ¶12½ | 650 |
| **Henderson County—** | | |
| Atlantic Oil Prod. Co. Gamble 1, D. O. Williams sur | * | 3103 |

### DRILLING REPORT

**CHEROKEE COUNTY**—Cherokee Development Co.'s (Colliton et al) Clapp 3, spudding. M. A. Davey et al's Earl Ragsdale 1, (Nathan Johnson sur) sd 1250 ft. Phelps et al's Lewis 1, (near Kesse), dk.

**ELLIS COUNTY**—John Olvey & Roy Jenkins' L. B. Griffith 1, (R. DeLaPena sur), lcn.

**HILL COUNTY**—Guy Tucker et al's M. Traylor 1, (K. Fisher sur) Austin chalk at 266-550 ft, dr 600 ft. Eagle Drilling Co.'s J. T Jones 1, (1 mile W of Mt. Calm), dk.

**HENDERSON COUNTY**—O. N. Billings et al's Dansby 1, (J. J. Martinez sur) top Austin chalk 4300 ft, co 4400 ft. Evans et al's Martin 1, (Simon Boon sur) sd 2960 ft. Heine et al's Sterrett 1, (Isham Marshall sur) sd 1350 ft.

**HUNT COUNTY**—Gulf Prod. Co.'s W. T. Hicks 1, (John Bordine sur) top Austin chalk, 2095 ft, dr 2200 ft. Rycade Oil Corp.'s W. M. Holden 1, (Jas. McAdams sur) dr 1725 ft.

**KAUFMAN COUNTY**—B. J. Harper et al's Williamson 1, (E. Crane sur) sd 1998 ft.

**LIMESTONE COUNTY**—Eisenmayer et al's Hargroves 1, dk. Magnolia Pet. Co.'s Walter Williams 1, (Groesbeck Dist.) fsh drill stem 3015 ft. Morley & Morley's Head 1, (J. Young sur) co 3000 ft, td 4100 ft. Hunt et al's Claver Estate 1, (J. O. Moore sur) dr 200 ft. Yoder et al's John Doe 1, (McKenzie sur) rig. Transcontinental Oil Co.'s Roda Echols 1, (2½ miles W of Mexia) lcn.

**MILAM COUNTY**—Simms Oil Co. and Reiter-Foster Oil Corp.'s A. J. McKinney 1, (J. K. Taylor sur) coring Buda lime 3139 ft.

**NAVARRO COUNTY**—Bob Penn-Windsor et al's J. O. Burke 1, (E. R. Van Horn sur) one mile NE Powell, rig.

## Coastal Wildcats

### COMPLETIONS

| Company, Well and Location | Initial Production Bbls. | Depth |
|---|---|---|
| **Calcasieu Parish—** | | |
| Vacuum Oil Co. Farquhar 2 | * | 3692 |
| Marland Oil Co. of Texas, Phoenix Dev. Co. 1 | * | 5664 |
| **Ft. Bend County—** | | |
| Gulf Prod. Co. J. H. P. Davis 7 | * | 780 |
| Rycade Oil Corp.'s J. Meier 3 | * | .... |
| **Jefferson County—** | | |
| Gulf Prod. Co.'s Thomas 5 | * | 1350 |

### DRILLING REPORT

**CHAMBERS COUNTY**—W. C. Moore et al's Blanke 2, on Blanke tract, H&TC sec 30, 1500 ft W of Blanke 1, sd 1000 ft.

**COLORADO COUNTY**—R. C. Timms et al's Drumgould 1, H. A. Cutler tract near Eagle Lake, no report.

**FORT BEND COUNTY**—Gulf Prod. Co.'s J. H. P. Davis 7, Sec. 101 H&TC Ry sur, 100 ft to N and W lines, abn 780 ft; J. H. P. Davis 8, 100 ft to N and W lines on G. Watson tract, dr 2680 ft, shale. Rycade Oil Corp.'s Wisdom 4, 200 ft S of No. 2, off Nash dome, dr 1743 ft, sand and lime; Flessner 2, 325 ft N of Nash 5 and 150 ft N and 1300 ft E of SW cor of D. Flessner 200-acre tract on edge of Nash dome, rigging; J. Meier 3, 2900 ft W of E line on Julius Meier 207.7-acre tract, off Nash dome, abn in cavity near surface; Nash 6, 1500 ft and 45 degrees SW of Nash 5, Lot 2 G. W. R. Nash 200-acre tract, 500 ft S of N line, dk. P. A. Neilan's Frederick 2, 300 ft N and [illegible] from these lines in sur 19, S. George lease, no report.

**GALVESTON COUNTY**—Gulf Prod. Co.'s Smith 4, 300 ft W of No. 2, sd 3200 ft.

**GOLIAD COUNTY** — Houston Oil Co.'s Pettus 1, 10 miles W of Goliad, set surface cas 433 ft.

**HARDIN COUNTY**—Vacuum Oil Co.'s Teel

3, off Saratoga dome, blg dk. Rio Bravo Oil Co.'s Fountain 5, near Saratoga field, rigging up.

**HARRIS COUNTY**—The Texas Co.'s Warren 6, 1300 ft W and 800 ft S of E line, E. Ehrenberg sur, near Hockley, dr 2368 ft, sand. Drain Oil Co.'s Harrel 1, 1¼ miles SW of Sid Westheimer 1, near Cross Timbers, lcn. Rio Bravo Oil Co.'s Settegast 2, 650 ft W and 500 ft S of NE cor of Settegast 100-acre lease, dr 4076 ft blue shale; Pierce Fee 2, 300 ft N and 75 ft E of No. 1, lcn.

**HUNT COUNTY**—Rycade Oil Corp.'s Holden 1, M. A. Holden-J. McAdams tract, dr 1715 ft.

**JEFFERSON COUNTY**—Houston Oil Co.'s Sun Davis 4, T&NO sur, 400 ft N of No. 3, near Big Hill, dr 3221 ft; Sun Dyson 1, Big Hill, dr 2841 ft. Gulf Prod. Co.'s Thomas 5, at Fannette, near Hampshire on E. Thomas 445-acre tract, abn 1350 ft; Thomas 6, dr 990 ft. Yount-Lee Oil Co.'s Gladys City 2, 75 ft S and 100 ft E of NW cor of Block 21, J. A. Beatch sur, rigging up.

**MATAGORDA COUNTY**—Sheppard Mound Oil Co.'s Hawkins 2, on Hawkins ranch, Sheppard Mound, dr 2950 ft hard rock.

**ORANGE COUNTY**—Republic Prod. Co.'s French 1, 1628 ft W and 1058 ft to S line on H. Palmer tract, dr 2676 ft sand and shale.

**REFUGIO COUNTY**—Houston Oil Co.'s O'Connor 1, Tom O'Connor ranch, Hearn sur, near Mission Bay, dr 1133 ft.

**VICTORIA COUNTY**—Houston . Oil Co.'s O'Connor 1, Mrs. M. V. O'Connor ranch, dr 2117 ft.

**WASHINGTON COUNTY**—S. H. Spangler et al's Regeine 1, 6 miles NW of Burton, Sandtown district, on Regeine farm, dr 1000 ft.

**WHARTON COUNTY**—Jas. W. Rich & Humphrey Oil Corp.'s Dennis 1, 5 miles NW of Wharton in Block 9, R. Kuykendall league, 4125 ft S of Colorado River, dr 435 ft. Atlantic Oil & Prod. Co.'s Taylor 1, 300 ft NW of Taylor 3 producer and 50 ft from SW and SE lines of Atlantic 20-acre lease, dr 3160 ft; Taylor 3, 50 ft from both lines of NW cor of Atlantic 20 acres, rigging up, Taylor 2, offset to Sun Co.'s No. 1, dr 1500 ft gumbo Humble Oil & Ref. Co.'s Hawes 1, 50 ft from both lines of NE cor of E. Hawes 74-acre tract, dk. The Texas Co.'s Taylor 4, 200 ft NW of Taylor 3 on S. T. Taylor 400-acre tract, dr 1650 ft, sand and boulders; Taylor 5, 200 ft SW No. 4 and offset to Sinclair No. 1, bldg dk; Taylor 6, 100 ft NE No. 4 and 100 ft SE of Atlantic's No. 1, bldg dk; Taylor 7, 200 ft SW of No. 5, bldg dk; Sinclair Oil & Gas Co.'s Taylor 1, 50 ft out of SE cor of 5-acre tract and offset to Atlantic'c No. 1, dr 623 ft sand and boulders. Sun Co.'s Taylor 1, 50 ft from each line out of SE cor of 5-acre lease, dr 625 ft; No. 2, offset to Atlantic's No. 3, dk. Murchison & Fain's No. 1, near center of Marland Oil Co. of Texas' 50-acre block N of producer, lcn. Oxford Oil Co.'s No. 1, NW of Humble-Gulf 124-acre tract, spudded. M. S. Floyd 1, on M. S. Floyd 56-acre tract, lcn. Gulf Prod. Co.'s Borden 1, on A. P. Borden 600-acre tract in SE cor, near Mackey, dr 860 ft, sand; Chase 1, 500 ft to S and 50 ft to W lines of E. M. Chase 60-acre tract, off Boling dome, Stephen F. Austin League, dr 200 ft.

**CALCASIEU PARISH**—Vacuum Oil Co.'s Farquhar 2, 150 ft S and 100 ft E of NW cor of SW¼ of SW¼ sec 9, abn 3692 ft; Freiberg & Wolfe 2, Lockport, 200 ft each way out of NE cor, bldg dk; No. 1, 780 ft S and 685 ft E of NE cor of SW quarter of sec 9, fsh 4654 ft to drill deeper; Bordages 2, 500 ft W and 200 ft N of SE cor of N½ of NW¼ sec 9, set 12½-inch cas 1264 ft; Miller 5, 200 ft N of SW cor of NW¼ sec 10, fsh 4416 ft; Miller 6, 475 ft N and 11 ft W of center of sec 9, dr 2000 ft, rock; Miller 7, 500 ft W of No. 3, bldg bridges; Miller 8, 400 ft N of No. 3, bldg dk; Miller 9, 400 ft N and 100 ft E of No. 4, bldg bridges. Marland Oil Co.'s Phoenix Development Co. 1, Lockport, 650 ft E and 150 ft S of NW cor of SW sec 16, abn. Standard Oil Co. of La.'s Industrial Lumber Co. 5, 1000 ft S of No. 4, spd. Union Sulphur Co.'s Doiron 1, 340 ft S and 870 ft W of NE cor of NE¼ sec 4-8-10, lcn. Earl Pool et al's Castle 1, NE¼ of sec 14-9-3, sd 2070 ft. Pure Oil Co.'s Sallier 2, dr 4550 ft.

**CAMERON PARISH**—Yount-Lee Oil Co.'s Stateland 1, Hackberry dome, 100 ft N and 1197 ft E of SW cor of sec 16-12s-10w, no report. Pure Oil Co.'s Sweetlake 2, 4944 ft water sand.

**MARTIN PARISH**—Ohio Oil Co.'s Martin 1, Hager dome district, NE¼ sec 32, dr 1425 ft.

**ST. LANDRY'S PARISH**— Bristol Oil & Mineral Co.'s Desire Dreaux 1, 1147 ft W and 1352 ft N of SE cor sec 15-8s-3e, no report.

**ST. MARY'S PARISH**—Rio Bravo Oil Co.'s Glenwild 1, on Glenwild 4500-acre plantation, dr 1890 ft, gumbo. George Leland's Caffrey 1, 330 ft N and 220 ft E of SW cor lot 101 on Cote Blanch Island, sec 12-15-7, fsh 1620 ft.

## *Central West Texas Wildcats*

### COMPLETIONS

| Company, Well and Location | Initial Producers Bbls. | Depth |
|---|---|---|
| **Culberson County—** | | |
| The California Co. M. A. Grisham 1-A (dd) ..... | * | 4010 |
| **Reagan County—** | | |
| Big Lake Oil Co. University 54 | 2600 | 3070 |
| **Sterling County—** | | |
| Rummell & Kanawah-Angelo Oil Co. Clark 1 ..... | * | 1430 |

### DRILLING REPORT

**COKE COUNTY**—Lipan Oil Co.'s E. C. Rawlings 1, dk.

**CONCHO COUNTY**—Dutton et al's W. O. Schlutz 1, dk.

**CRANE COUNTY**—Cordona Oil & Potash Co.'s Jax Cowden 1, sd 3571 ft. J. S. Cosden et al's Connell 1, lcn. Church-Fields et al's University 1, fsh tools 250 ft. Independent O. & G. Co.'s Len Taylor 1, (Elev. 2476 ft.) dr 440 ft. Marland Oil Co. et al's Cowden 1, lcn. Penn-Texas Dev. Co.'s Jax Cowden 1, dr 2335 ft. Texas Dev. Co.'s Jax Cowden 1, dr 3635 ft. F. P. Zoch et al's S. Keith 1, lcn.

**CROCKETT COUNTY**—J. S. Cosden et al's Noelke 1, set 10-inch casing 900 ft. J. C. Cooke (Wilcox) et al's University 1, sd contract depth 3253 ft; J. S. Todd 1, dr 1525 ft. Crockett Drilling Synd.'s J. M. Shannon 2, sd 1590 ft; Shannon 3, lcn. Cumberland O. & G.


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*Say you saw it in The OIL WEEKLY*

BANK TO PAY 100 PCT. A YEAR
(By The Associated Press.)
New York, June 9.—Stock of the First National bank of New York, of which George F. Baker is chairman, to-day was placed on a 100 per cent annual dividend basis when directors increased the quarterly payments from 15 to 25 per cent. The dividends include a disbursement which will be made on the shares of the bank's affiliated investment concern, the First Security company. First National bank shares to-day were quoted at $2,500, compared with a record high of $2,900 last February and about $1,600 a year ago.
NEW YORK METAL MARKET.

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Co. et al's Couch 1, spudded and sd. Humphreys Corp.'s Uniersity 1, dr 2190 ft. Humble O. & R. Co.'s J. P. Sorg 1, (Elev. 2757 ft, top salt 1130 ft) ur 8¼-inch casing 2375 ft. Humble & Marland's L. P. Powell 3, (Elev. 2812 ft; top salt 1170 ft; top lime 2585 ft) plugging back from water at 2734 ft to 2716 ft with 1500 oil in hole. Magnolia Pet. Co.'s J. M. Shannon 1, dr 830 ft. Republic & Marland's J. S. Todd 1, fsh tools 2270 ft. Wm. Schaffer et al's University 1, sd 1365 ft. Carl Cromwell et al's L. P. Powell 1, (Elev. 2799 ft; top salt 1135 ft) dr up bailer 2410 ft.

**CULBERSON COUNTY**—Pure Oil Co.'s Mrs. G. H. Quaid 1, sd 1900 ft. Deep Rock Oil Co.'s Kloh-Rumsey 1, lcn. M. A. Grisham et al's Grisham 1, sd 3370 ft.

**JEFF DAVIS COUNTY**—Herbert Oil Co.'s T. M. Wingo 1, fsh casing 1782 ft.

**GARZA COUNTY**—Deep Rock Oil Co.'s S. M. Swenson 1, dr 400 ft. Emerald Oil Co.'s Connell 1, dr 2410 ft. Mid-West Exploration Co.'s N. N. Rogers 1, lcn. Choate-Henshaw & Marland's Cobbell 1, fsh bit 3453 ft.

**GLASSCOCK COUNTY** — Case-Hoover et al's W. H. Sparkman 1, sd 1945 ft. J. A. Mascho & Marland's Nellie Calder 1, spudded and sd. Choate-Henshaw & Marland's Neal 1, sr 10-inch casing 2155 ft.

**TOM GREEN COUNTY**—M. D. Bryant et al's Llano County Fee 1, fsh 435 ft. Penn-Windsor et al's Harley Turner 1, sd 1127 ft. Church-Fields et al's Williams 1, dr hole full water 1245 ft. Roxana Pet. Corp.'s L. T. Clark 1, sd after two shots in oil sand 1340-50 ft, td 1360 ft.

**HOWARD COUNTY**—Deep Rock Oil Co.'s Hyman-Scott 1, co after fire, td 3005 ft. Fred Hyer et al's H. R. Clay 1, pumping 10 bbls oil, td 1565 ft. Choate-Henshaw & Marland's M. H. O'Daniel 1, fsh bailer, td 3103 ft. Owen-Sloan et al's Otis Chalk 1, spudded and sd. Transcontinental Oil Co.'s John Roberts 1, rig. H. G. Gwinnupp et al's Talley 1, lcn at C SW¼ Sec. 35, blk. 32, Tsp. 1-S.

**IRION COUNTY** — Oklavania Oil Co.'s Sawyer Cattle Co. 1, top salt 750 ft, set 10-inch casing 1163 ft. Orient Oil Co.'s J. D. Sugg 2, spudded and sd. P. H. Williams et al's Ash Bros. 1, dk.

**JONES COUNTY**—Red Bank Oil Co.'s Alexander 1, probably will abn 2340 ft. J. C. Yancy et al's Herndon 1, spudded and sd; Rowell 1, spudded and sd.

**KENT COUNTY**—The Texas Co,'s Barron 1, dr salt 635 ft.

**KING COUNTY**—The California Co.'s R. B. Masterson 1, sd 3100 ft. Hoffer Oil Corp.'s Patten 1, sd 1580 ft.

**LOVING COUNTY**—Lockhart & Co.'s W. D. Johnson 1, showing oil and water 3165-76 ft, sd for 8¼ casing 3218 ft.

**LYNN COUNTY**—Hart Oil Corp.'s C. O. Edwards 1, fsh 200 ft.

**MIDLAND COUNTY**—M. Agress et al's Jones 1, sd 755 ft. Rook-Zimmerman et al's Hill 1, sd 3650 ft.

**MITCHELL COUNTY**—Atlantic Oil Prod. Co.'s Adams 2, rebldg burned rig, td 3075 ft; Adams 3, dr 1690 ft; Adams 4, dr 400 ft. The California Co.'s Adams 1-B, dr 2795 ft; Paul Elder 5, dr 400 ft; Morrison 15, dr 2200 ft; H. C. Miller 5-A, dr 510 ft; Swenson 1, dr 2790 ft; Womack 3, dr 1965 ft. Eastland Oil Co. & Gulf's Adams 1, dr 1350 ft. W. B. Green et al's Ellwood 1, dr 3445 ft. Mid-Kansas O. & G. Co.'s Ellwood 1, dr 720 ft. Marland Oil Co.'s Shumaker 1, dr 500 ft. Morrison-Thompson's Scott-Hyman 1, sd 1440 ft. Magnolia Pet. Co.'s W. W. Watson 1, dr with 800 ft oil in hole 3118 ft; A. P. Watson 1, lcn; Lucey Coleman 1, dr 2905 ft; F. Adams 1, dr 795 ft; C. M. Adams 3, rig; Kloh-Rumsey 1, rig.

**PECOS COUNTY**—Tom Adams Oil Co.'s A. A. Gray 1, dr 1130 ft. Dixie Oil Co.'s Mrs. L. Hersheusen 1, dr 1650 ft. Transcontinental Oil Co.'s Perry 1, dr 1945 ft. T. J. Quinby et al's E. M. Metcalf 1, sd 790 ft. West Texas Exploration Co.'s Macey 1, sd 1160 ft.

**PRESIDIO COUNTY**—Hadlock & Miller's Tootle 1, sd 1780 ft.

**REAGAN COUNTY**—Big Lake Oil Co.'s University 20-A, co 2455 ft; University 23-A, dr out bridge 2473 ft; University 25-A, sd 2480 ft; University 37-A, dr 475 ft; University 51, fsh 2485 ft; University 52, dr 2630 ft; University 53, set 8¼ casing 2935 ft; University 55, dr 2890 ft; University 56, rig; University 57, dr 2350 ft; University 58, dr 1540 ft; University 59, dr 2175 ft; University 60, dr 960 ft; University 61, dr 800 ft; University 62, dr 700 ft. H. D. Camp et al's University 1, sd repairs 475 ft. Milham Corp.'s University 1, dr 1150 ft. Ben Simon et al's R. A. Walter 1, lcn. Peer Oil Corp.'s Sawyer Cattle Co. 1, top salt 925 ft, dr 975 ft. L. V. Tannehill et al's University 1, sd 1160 ft. Texon Oil & Land Co.'s University 33, dr 3745 ft; University 37, set 6⅝ casing 2984 ft; University 38, rig; University 1-A (deep test) dr 2435 ft.

**REEVES COUNTY**—Owen-Sloan & Deep Rock Oil Co.'s M. W. Tatum 1, sd 2365 ft. Humble O. & R. Co.'s Kloh-Rumsey 1, steel dk in NE corner Sec. 33, TP Ry. Sur., blk 57, Tsp. 1. World Oil Co.'s Abrams 1, dr 1655 ft. Schooler-Slack et al's Abrams 1, sd 320 ft.

**SCURRY COUNTY**—Fogelson et al's Bryce 1, spudded and sd. Lockhart & Co.'s S. H. Newman 1, dr 520 ft. Morrison-Thompson et al's M. E. Towle 1, rig.

**STONEWALL COUNTY**—Arkansas Fuel Oil Co.'s Craft 1, dr blue shale 3152 ft. Elder Nance et al's Ward 1, sd 2130 ft; Thomas 1, sd 1520 ft. Ward Synd.'s J. Q. Ward 1, dr 2635 ft.

**STERLING COUNTY**—Co-Operative Dev. Co.'s E. W. Douthitt 1-A, co 1025 ft. Chicago-Texas O. & G. Co.'s Durham 1, sd 2469 ft. Chas. Harty et al's Reynolds-Harty 1, dr 1820 ft. Deep Rock Oil Co.'s Clark 1, dr 150 ft. G. M. Richardson et al's J. S. Johnson 1, lcn. Wrightsman et al's Collins 1, dr 960 ft.

**SUTTON COUNTY**—Chesapeak Oil Co.'s Clarkson-Allison 1, fsh tools 610 ft.

**TAYLOR COUNTY**—Sanger O. & R. Co.'s R. H. Anderson 1, sd 1860 ft; W. Norwood 1, spudded and sd.

**UPTON COUNTY**—Big Mesa Oil Co.'s University 1, Sec. 17, blk. 3, dr gyp 2975 ft. Choate-Henshaw & Marland's Noelke 1, materials. Dixie Oil Co.'s A. S. Burleson 1, dr 255 ft. W. W. Donnelly & E. H. Hults' H. M. Halff 1, sd 100 ft. J. A. Germany et al's H. M. Halff 1, sd 860 ft. Independent O. & G. Co.'s A. S. Burleson 1, (Elev. 2616 ft; top salt 575 ft) dr 1620 ft. Kirby Pet. Co.'s Union Land Co. 1, (Elev. 2529 ft) ur casing 2590 ft. Plateau Oil Co.'s Union Land Co. 1, (Elev. 2533 ft; top salt 555 ft; top lime 1886 ft) trace of oil 1990 ft; trace gas 2015 ft, dr 2060 ft. Republic Prod. Co. & Marland's Mrs. Baker 1, (Elev. 2613 ft) pumping 80 bbls oil, td 2239 ft. The Texas Co.'s Union Land Co. 1, dr 540 ft. F. P. Zoch et al's Union Land Co. 1, (Elev. 2709 ft; top salt 800 ft) dr 815 ft; E. P. Ruhman-Windham 1, rig.

**WARD COUNTY** — Chesapeak Oil Co.'s Edgar J. Marston 1, rig. Gulf Prod. Co.'s Hutchings et al 1, (Elev. 2609 ft; top salt 825 ft; top lime 2105 ft; top big lime 3025 ft; fsh bit 3265 ft.

**WINKLER COUNTY**—R. A. Westbrook et al's T. G. Hendrick 1, rig.

## *Texas Panhandle Wildcats*

### COMPLETION

| Company, Well and Location | Initial Production Bbls. | Depth |
|---|---|---|
| **Carson County—** | | |
| Olson Bros. et al Burnett 1..... | * | 3060 |

### DRILLING REPORT

**CARSON COUNTY** — Amarillo Oil Co.'s L. Bivins 3-B, making heavy gas dr 2720 ft. American Ref. Co.'s Burnett 5-A, cem cas 3035 ft; Burnett 6, dr 2110 ft. J. S. Cosden et al's Burnett 1, top lime 2100 ft, ur casing 2107 ft. B. S. Barnes et al's Burnett 1, set 15½ casing 475 ft. Crosbie et al's Burnett 3, dk. Culbertson Bros. & Co.'s Burnett 1, sd making gas 2460 ft. Gates Oil Co.'s Burnett 2, crooked hole 2850 ft. Gulf Prod. Co.'s Burnett 10, dr 310 ft. Magnolia Pet. Co.'s Burnett 2, rig. Marland Oil Co.'s Burnett 1-A, set 20-inch casing 200 ft; Burnett 1-B, lcn. The Texas Co.'s Mary C. Burnett 4, dr 2210 ft.

**COLLINGSWORTH COUNTY**—Continental Oil Co.'s Hughes 1, ur casing 2915 ft.

**COTTLE COUNTY**—National Potash Co.'s A. C. Dulaney 1, dr 1455 ft.

**GRAY COUNTY**—Anderson-Brock et al's Beavers 1, dr granite 3800 ft. Empire Gas & Fuel Co.'s H. Heithott 1, sd with show oil 3166-70 ft. H. F. Wilcox et al's Worley-Reynolds 2, dr 1940 ft; Coombs-Worley 2, lcn

is 330 ft N and 1320 ft E of SW corner Sec. 59, block 3. The Texas Co.'s G. H. Saunders 2, rig.

**HALL COUNTY**—Hudspeth & Taylor's T. R. Fuston 1, sd 1645 ft.

**HUTCHINSON COUNTY**—American Ref. Co.'s Weatherley 1, swedging casing 3325 ft; G. A. Whittenburg 1, lcn in Sec. 2, D. & S. F. Ry sur. Canyon Oil Co.'s Whittenburg 1, swedg casing 2300 ft; Whittenburg 2, dr 1895 ft. Centerfield Oil Co.'s Smith 1, showing oil, dr 2905 ft. Jack Crosbie et al's J. A.Whittenburg 1, fsh casing 600 ft. Currie Bros. & J. R. Phillips' Smith 1, dr 800 ft Drysdale Oil Corp.'s Watherly 1, fsh 1995 ft. Dunnigan et al's J. A. Whittenburg 1, lcn in SW¼ Sec. 13, Blk. "Y". Gates Oil Co.'s Kingsland 1, spudding. Gibson Oil Corp.'s G A. Whittenburg 2, rig; J. A. Whittenburg 1, dr 1960 ft; Kingsland 1, rig. Gulf Prod. Co.'s E. Cockrell 1, dr 1525 ft; J. A. Whittenburg 1, dr 2000 ft. W. H. Holmes et al's Smith 1, dr 345 ft. Lennox & Stover's Smith 1, dr 1790 ft. McKinney-Bayer Oil Corp.'s Weatherly 1, dr 2620 ft. McIlroy Oil Co.'s Smith 2, dr 2800 ft. McIlroy & Herring's Smith 1, dr 2600 ft. McMillen et al's J. A. Whittenburg 1, dr 400 ft. Miller & Wetzel's J. A. Whittenburg 1, dr 700 ft J. H. Middleton et al's Weatherly 2, dr 2965 ft; Smith 1, lcn in NE corner Sec. 15, blk. "Y". Native Oil Co.'s Johnson Bros. 1, dr 2790 ft. J. R. Phillips et al's Weatherly 1, swedg casing 2190 ft. Phillips Pet. Pet. Co.'s J. A Whittenburg 1, dr 215 ft; Whittenburg 2, rig. Phillips Pet. Co. et al's Johnson Bros. 1, sd 770 ft. Prairie O. & G. Co.'s M. Weatherly 2, fsh 12½ casing 723 ft. Prairie & TP Coal & Oil Co.'s Johnson Bros 1, dr 2155 ft. Pulaski Oil Co.'s Smith 1, dr 940 ft; Smith 1, dr 735 ft; Smith 3, rig. W. R. Ramsey et al's Johnson Bros. 1, rig. Skelly Oil Co.'s J. A. Whittenburg 1, rig. South Hutchinson Oil Co.'s Whittenburg 2, dr 2780 ft; Whittenburg 3, dr 340 ft. The Texas Co.'s E Cooper 1, rig; Burnett 7, dk. Travelers Oil Co.'s Kingsland 1, showing oil, dr 2890 ft. Tex-O Oil Co.'s Johnson Bros. 1, running 8¼ casing 2740 ft. Twin Six Oil Co.'s Kingsland 2, fsh pipe 2435 ft; Kingsland 3, rig; Kingsland 4, dr 1735 ft. J. D. Ward et al's Cockrell 1, dr 330 ft; Cockrell 2, spudding. Western Enterprise O. & G. Co.'s Smith 2, sd 2083 ft. Westex Oil Co.'s Whittenburg 1, std 2120 ft; Whittenburg 2, dr 485 ft. Jim Whittington et al's Kingsland 1, dr 2650 ft. White Eagle O. & R. Co.'s Smith 1, rig.

**MOORE COUNTY**—Amarillo Oil Co.'s R. B. Masterson 2-A, dr 2035 ft.

**POTTER COUNTY**—Amarillo Oil Co.'s L. Bivins 4-A, dr 2755 ft. Prairie O. & G. Co.'s L. Bivins 1, co 2649 ft.

**ROBERTS COUNTY**—Phil Engle et al's Mrs. Lederick 1, dr 3950 ft.

**WHEELER COUNTY** — MacFarland & Thomas et al's Kachelhoffer 1, dr 2010 ft. Mid-West Exploration Co.'s W. C. Compary 1, fsh cas 2985 ft.

## *Oklahoma Wildcats*

**ATOKA COUNTY**—Hanson et al's Dabney 1, C SE NE 17-4-11, sd 3722 ft, start soon. Wapanucka Dev. Co.'s Underwood 1, C W L SE SE 28-15-10, sd 1343 ft.

**BECKHAM COUNTY**—Magnolia Pet. Co.'s Roberts 1, C NE SE 4-8-25, dry and abn at 369 ft. W. R. Duke's McGee 1, NWc SW SE 25-8-22, set 8⅛-inch at 950 ft. Sheldon, Buissey & Clay's Dugger 1, NEc NE 24-9-25, drlg 4200 ft.

**BLAINE COUNTY**—Okama Oil Co.'s Eklemier 1, SWc 21-15-10, sd 2610 ft.

**CANADIAN COUNTY**—Carrol et al's Setter 1, SEc 2-13-8, sd 100 ft, tools away. O. D. Jones et al's Sanders 1, C NE NE NE 29-11-7, sd 2150 ft.

**COMANCHE COUNTY**—Mid-Kansas Pet. Co.'s Cox 1, NEc SE NE 30-1-13, drlg 768 ft.

**GRADY COUNTY**—Becker-Reed Oil Co.'s Brown 1, C NW NE 29-6-7, set 8-inch 2090 ft.

**GRANT COUNTY**—Cowden's Vallner 2, SW 22-25-4, sd 1475 ft. Lambert & Mink's Tabor 1, C SE NE SE 23-26-3, spd. Dedman, Flannagan & Hennage's Sherrer 1, NEc SW 16-26-3. Marland Oil Co.'s Webb 1, C NW NE NE 2-27-3w, co td 4109 ft.

**HUGHES COUNTY**—Walton, Snyder & Marshall's Kite 1, C E L NE NW 8-6-10, sd 3701 ft. Henry Greis & Kerr's Pearson 1, C SE NE NE 30-5-10, sd 3500 ft, cd. Brock's Brunner 1, C SW SW NW 28-7-8, swb 80 bbls 4336-40 ft.

**JEFFERSON COUNTY**—Oasis Oil Co.'s Major 1, C SE SW 34-5-6, spd and sd.

**KAY COUNTY**—Tonkawa Dev. Co.'s McDaniels 1, C SE SE SE 15-25-1, ur 15-inch 880 ft. Souligny Bros.' School land 1, NEc NW 16-26-3, drlg 1850 ft. Miss. Valley Oil Co.'s Butler 1, C NE NE NE 22-27-2, hfw 2935-65 ft. Galconda Oil Co.'s Welge 1, SWc NW 29-27-2, 6-inch 2980 ft. Simms Oil Co.'s School land 1, C NE NE SW 33-28-1, dry and abn 3531 ft. Davis Drlg. Co.'s Street 1, C NE NE NE 31-28-3, dr 3520 ft.

**KINGFISHER COUNTY** — McKenna & Crawford's No. 1, NEc SW 27-16-6, spd and sd.

**LINCOLN COUNTY**—Douglas Oil Corp.'s Ewing 1, NWc 7-13-3e, dr 4050 ft. P & R Corp.'s Henizig 1, NWc 7-13-6, drlg 4214 ft. Ruby et al's Cull 1, NEc NW 36-15-4, sd 4721 for cas.

**LOGAN COUNTY**—Blackford Oil & Gas Co.'s Lair 1, C S L N½ SE 28-16-1, sd 1675 ft. Franklin Oil Assn.'s Moore 1, NWc SE SE 28-18-4, set 6-inch 3570 ft. Haley & Pioneer's Quair 1, SWc SE 33-18-3, sd 1557 ft.

**LOVE COUNTY**—Smyer & Stein's Gray 1, C SE SE 19-9-1, rig.

**MAJOR COUNTY**—Frantz & Slick's Gray 1, C NW 36-21-11, sd 1000 ft.

**MARSHALL COUNTY**—United "8"s Marshall 1, SW SW 30-5-6, drlg 580 ft. Ramsey Bros.' Griffin 1, SW SW 10-5-5, drlg 1060 ft.

**PONTOTOC COUNTY**—Bronson & Doyle's Starrett 1, SWc NE 5-4-5, dry and abn 1900 ft.

**POTTAWATOMIE COUNTY** — Holmand Osmand et al's Fiddler 1, SEc NW 4-5-5, sd 3701 ft. Davis Detrick's McCathey 1, SEc NW 10-6-2, sd 3850 ft. Central National Oil Co.'s Toney 1, C SW SW SW 28-10-4. Texas Co.'s Allenbaugh 1, SEc SW 3-11-5, 5-inch 4535 ft.

**SEMINOLE COUNTY** — Riverside & Kinney's Nitley 1, C S½ NE SE 25-5-5, drlg 895 ft. R. F. Garland's Winey 1, C NW NE NW 6-6-8, drlg 690 ft. Bryan Bros.' Walker 1, C SE SE SE 4-7-6, Oil 2752-53 ft. Transcontinental Oil Co.'s Davis 1, NE SW 22-7-7, td 3597 ft. Pure Oil Co.'s Jonah 1, C E L NW NW NE 15-9-7, drlg 810 ft.

**TILLMAN COUNTY**—C & O Drlg. Co. & Pearson's Daugherty 1, SEc SE 33-4-15, dry and abn 3433 ft. Oasis Oil Co.'s Snelling 1, SEc SE SE 13-1-18, drlg 50 ft.

**TEXAS COUNTY**—Wilcox O. & G. Co.'s No. 1, SWc SE 28-3-13, dr 633 ft; No. 1, SEc SE 28-3-13, rig.

## *Kansas Wildcats*

**BARBER COUNTY**—R. B. Brown's Martin 1, NWc 14-34-11, drlg 1500 ft.

**BARTON COUNTY**—Dick Gray's Taul 1, NWc 31-18-12, sd 2100 ft. John Herron's Everleigh 1, SEc NE 22-18-3, sd 4550 ft. Huffins et al's Smith 1, C NE SE NE 17-19-11, sd 3900 ft.

**BUTLER COUNTY**—Skelly Oil Co.'s Dohren 1, NE 14-25-3, 20 bbls, 2686-2700 ft. Polhamus & Smith's Fuller 1, SEc 9-26-6, sd 770 ft. Marland's Lemon 1, NWc NE 9-28-7, fsh 1550 ft.

**CHASE COUNTY**—Derby Oil Co.'s Newman 1, NW SW 24-20-9, lcn. Dingee, Pryor, Lockhart et al's Ateyo 1, NWc SE 25-21-9, sd 1150 ft; Evans 1, NWc NE 1-22-9, sd 1300 ft.

**CHAUTAUQUA COUNTY**—Blackwell O. & G. Co.'s McKown 1, NWc SE 31-32-10, show oil 1270 ft, sd 2290 ft. so.

**CLOUD COUNTY**—Concordie Oil & Prod. Co.'s Murdock 1, SEc 6-6-4, sd 3030 ft.

**COWLEY COUNTY**—Branson et al's White 1, SEc SW SW 7-30-6, spd and sd. Potter & Banks' Withers 1, NE NW 32-30-5, drlg 1400 ft. Phillips Pet. Co.'s Hunt 1, NEc 16-34-5, drlg 1200 ft. S. H. E. Pet. Co.'s Day 1, NE NW 24-34-6, drlg 900 ft.

**ELK COUNTY**—I. T. I. O. Co.'s Cummings 1, C NW NW 31-30-10, sd 1530 ft.

**GERRY COUNTY**—Liberty-Texas' Wright 1, NEc 9-12-6, sd 1100 ft; Foster 1, NEc 30-13-6, sd 2000 ft.

**GRAHAM COUNTY**—Keyes Bros.' Taxton 1, SEc NW 23-8-24, 8-inch 2420 ft. Guien & Shilers' Baker 1, NWc SE NW 17-10-24, rig.

**JEFFERSON COUNTY**—Northern Coun-

# FLOW TANKS

Our standard flow tanks are of 200 and 500 Bbl. capacities, with 16-foot single side sheets, with all seams and joints heavily reinforced both inside and out. They also have heavy gussetted angle stays, extending from top to bottom, amply meeting flow tank requirements.

We also offer smaller flow tanks for lighter production in 60, 100, and 120 barrel sizes.

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MADE OF KEYSTONE COPPER STEEL **MALONEY TANK MFG. CO.** MADE OF KEYSTONE COPPER STEEL

**Tulsa, Oklahoma**

Size 12 to 3,000 Bbls.

Packed in Steel-Bound Crates for Export

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ties' Edwards 1, SEc NW NW 13-9-9, sd 3405 ft.

**LABETTE COUNTY**—Ark. Fuel Oil Co.'s Sparks 1, NEc SE SW 14-31-7, sd 1110 ft.

**LINCOLN COUNTY**—Scott & Collins' Stone 1, SE SW NE 19-11-8, sd 500 ft.

**OSAGE COUNTY**—Rogers & Bittle's Bertha 1, SEc NW SE 28-17-15, lcn. Baker et al's Lease 1, C SE SE 3-15-15, sd 260 ft. Mull-Vit. Dev. Co.'s Neil 1, NWc NE SW NW 8-17-17, sd 2835 ft.

**RENO COUNTY**—Frank Hopper's Stevens 1, NWc 7-26-7, sd 2750 ft.

**RICE COUNTY**—Jasper & Beschka's Walker 1, SWc NE 10-18-6, ur 5-inch 3460 ft. Stamey's Barnes 1, SEc NE 21-20-6, sd 2726 ft, hfw.

**RILEY COUNTY**—Pawnee O. & G. Co.'s Marks 1, SWc NE NW 26-10-6, drlg 2400 ft.

**BROOKS COUNTY**—Keys Pet. Co.'s Saidon 1, NWc SW SE 7-2-20, spd and sd. C. Findeiss et al's Minx 1, SWc 25-10-19, td 3669 ft pb 3086 ft.

**SALINE COUNTY**—Thrall et al's Halquest 1, SEc NE NE 15-15-4, sd 1010 ft.

**SUMNER COUNTY**—Roxana Pet. Corp.'s Miller 1, NE SW 17-32-2, ur 8-inch 2460 ft. John Herron et al's Baker 1, NE SW 13-25-2, cellar.

**TREGO COUNTY**—Keys Pet. Co.'s Welsch 1, NWc SE 5-11-25, sd 1450 ft; Welsch 2, SWc NE SW 5-11-25, sd 1550 ft.

**WABAUNSEE COUNTY**—Williams et al's Henderson 1, NEc SW NE 15-13-12, sd 3600 ft.

**WOODSON COUNTY**—Alter et al's Hunt 1, NWc SW 13-25-14, sd 700 ft.

## *San Antonio District Wildcats*

**BEXAR COUNTY**—Ballard & Underwood's Easterwood 1, lcn.

**CALDWELL COUNTY**—Van Kueren Oil Co.'s Rideout 1, lcn. United North & South Oil Co.'s Kelly 1, dr; Tiller 1, dr; Brown 1, dr; Tabor, dr; A. Merci, dr; Rios, dr; Allen, dr. E. L. Smith Oil Co.'s Davis 1, spd in. Detex Oil Co.'s Bridges 1, dr.

**DUVAL COUNTY**—Associated Oil Co.'s Sutherland 1, coring at 3060 ft. Humble Oil & Ref. Co.'s Hagist 1, dr 820 ft, sdtr slip. United States Gas & Oil Co.'s Peters 1, temp abn at 2813 ft; Duval 1, sd for orders 2505 ft. Killam-Seacord's Benavides 1, dk. Cin Tex Oil Co.'s Benavides 1, dr 1200 ft. Grayburg Oil Co.'s Halff 1, lcn. Seagraves & Moody's Mesquite 1, dr below 1500 ft; Walsh 1, dk.

**GUADALUPE COUNTY**—Dunning & Armstrong's Dale 1, rigging up. Magnolia Pet. Co.'s Day 1, dr. Howell et al's Louis Willmann, dr. United North & South's Baker 30, dr. Smith-Payne-Bond's Duran 1, dk.

**JIM HOGG COUNTY**—Rydal-Rycade Oil Co.'s Allen 1, dr. Kitselman & St. Albans Oil Co.'s Holbein 24, set cas at 2041 ft. Beaucamp et al's Vela 1, dr. Magnolia Pet. Co.'s M. S. Bank 3, dr 1765 ft in limey stone; Martinez 10, dr 2000 ft in gumbo. Andrews Pet. Co.'s M. S. Bank 1, dry and abn. Simms Oil Co.'s Palacious 1, spudding in. Bailey et al's Palacious 1, dr. O. W. Killam's Martinez, comp 100 bbls at 2077 ft; 31 Martinez, dry and abn at 2120 ft; Martinez 32, comp 200 bbls at 2060 ft; Martinez 33, dr 1200 ft; Martinez 34, setting up; Holbein 1, dr 1500 ft in shale.

**ZAPATA COUNTY**—The Texas Co.'s Jennings 2, dr 3060 ft in shale. Wren et al's Martinez 1, abn at 2006 ft.

## *Louisiana Wildcats*

**COMPLETION**

| Company, Well and Location | Initial Production Bbls. | Depth |
|---|---|---|
| **Bossier Parish—** | | |
| G. W. Wetherbee's Bierle 1, 24-19-11 | * | 530 |

**DRILLING REPORT**

**BOSSIER PARISH**—Arkansas Fuel Oil Murray 1, 14-23-14, sd 1130 ft. Benton Synd.'s Bulkley 1, 9-20-13, rig. Collins & Woodley's Kilburn 1, 18-19-13, rig. Simms Oil Co.'s Sandige 1, 9-18-11, set 6-inch 1133 ft. Square Deal Oil Co.'s Hale 1, 17-18-11, to set 6-inch 1210 ft.

**CADDO PARISH**—Ark-Caddo Oil Co.'s Nickerson 1, 30-19-15, to resume dr 2600 ft. Dixie Oil Co.'s Jolley 1, 27-22-15, set 4-inch 3729 ft; Noel B-2, 13-21-15, dr 3275 ft. Fortuna Oil Co.'s Levee Board 2, 8-20-15, set 4½-inch 4003 ft, moving in cable tools to drill in; Bradford 1, 24-21-15, rig. Haynes Bros.' Louisiana. L. S. & P. 1, 8-19-16, ru cable tools, 3679 ft. Ohio Oil Co.'s Ardis 1, 1-21-15, coring 3760 ft; E. K. Smith 18, 12-21-15, dr 3515 ft; E. K. Smith 19, 12-21-15, dk.

**CALDWELL PARISH**—Alexander et al's Cruse 1, 6-11-14e, dk. Potts & Crickett's Gore 1, 30-12-3e, dr 1810 ft.

**CATAHOULA PARISH** — Ferguson-Kimbrough Oil Co.'s Nicholls 1, 13-9-6e, to set 8-inch 1980 ft. The Texas Co.'s Hyman 1, 24-8-2e, dr 1820 ft.

**CLAIBORNE PARISH**—Evans et al's Boatner 1, 10-9-5, dr 2510 ft. Triangle Drlg. Co.'s Keen 1, 7-19-5, dr 2835 ft; Meadows 1, 7-2-5, lcn.

**DE SOTO PARISH**—Dixie Oil Co.'s Jenkins 1, 9-12-11, set 8¼-inch 3293 ft. Fortuna Oil Co.'s Band 1, 32-12-15, rig. Gulf Ref. Co.'s Williams C-18, 31-13-11, dr 5910 ft.

**JACKSON PARISH**—El Dorado Chief Oil Co.'s Rhymes 1, 13-14-4w, sdtr 3650 ft.

**LA SALLE PARISH**—P. J. White's Louisiana-Central 1, 27-10-2e, dr 1576 ft; sd 1360 ft. Wright et al's Love 1, 16-11-2e, sd 1460 ft.

**LINCOLN PARISH**—Buckley & Palmer's Davis 1, 12-20-3w, dr 680 ft.

**MOREHOUSE PARISH**—Boisseau et al's Sullivan 1, 11-21-7e, dr 3220 ft.

**NATCHITOCHES PARISH**—Amerada Pet. Corp.'s Wafer 1, 3-11-8, dr 2110 ft.

**OUACHITA PARISH**—Culver et al's Cordell 1, 23-15-3e, sd 1360 ft. Dickson & Frue's Goodwin 1, 24-18-2e, sd 3036 ft. Southern Carbon Co.'s Jones 1, 6-16-5e, sd 3090 ft.

**RAPIDES PARISH**—Hincy & Mack's Barrow 1, 29-5-2e, sd 1250 ft.

**SABINE PARISH**—Emlet et al's Bowman-Hicks 6, 9-7-12, dr 3700 ft.

**UNION PARISH**—Arkansas Fuel Oil Co.'s Reeves 1, 14-20-1e, dr 830 ft. Empire Gas & Fuel Co.'s Dubach Lumber 1, 17-20-1e, dr 50 ft.

**WEBSTER PARISH**—Fortuna Oil Co.'s Bible 1, 8-20-9, fsh 4073 ft. Humble O. & R. Co.'s Cox 1, 22-21-10, fsh 4036 ft. Ohio Oil Co.'s Cox 1, 23-21-10, set 8¼-inch 3508 ft; Hodges 1, 23-21-10, dr 4030 ft. Palmer Corp.'s Davis 1, 23-21-10, plugged back to 4385 ft; to shoot and test again. Victor Wenzel's Lunsford 1, 10-19-9, dr 2350 ft.

**WINN PARISH**—J. R. Hale's Eagle 1, 6-10-2w, sd 840 ft.

## *Arkansas Wildcats*

**COMPLETIONS**

| Company, Well and Location | Initial Production Bbls. | Depth |
|---|---|---|
| **Cleveland County—** | | |
| Simms Oil Co.'s Moseley 1, 19-10-11 | * | 3501 |
| **Hempstead County—** | | |
| Tarver et al's Swafford 1, 14-11-25 | * | 2980 |

**DRILLING REPORT**

**ASHLEY COUNTY**—Pine Prairie Oil Co.'s Pine Prairie 2, 1-17-6, dk. Rhodes et al's Bledsoe 1, 20-15-7, r 1647 ft.

**CALHOUN COUNTY** — Brown Murdock Syndicate's Freeman-Smith 1, 5-15-18, sd 2907 ft. Magnolia Pet. Co.'s Calion 1, 29-15-14, coring 3685 ft. Southern C. O. Purch. Co.'s Freeman-Smith 1, 19-14-15, dr 100 ft.

**CLARK COUNTY**—Heath Trust's Arnold 1, 12-9-20, sw 839 ft. Wheelen Oil Co.'s Brown 1, 35-10-20, dr 1310 ft.

**CLEVELAND COUNTY**—Dedman et al's Moore 1, 28-9-10, sd 1757 ft.

**COLUMBIA COUNTY**—Pluto Oil Co.'s Robinson 2, 23-18-23, set 8-inch 900 ft.

**DALLAS COUNTY**—McNeil et al's Owens 1, 29-10-16, dr 2100 ft.

**DREW COUNTY**—Graves et al's Karnes 1, 35-13-6, sd 3033 ft. McClintock et al's Ogle 1, 35-13-5, set 6-inch 1810 ft.

**HEMPSTEAD COUNTY**—Burton et al's Garland 1, 23-10-25, dr 1510 ft. C. W. Robinson's Toner 1, 29-12-23, coring 2300 ft.

**LA FAYETTE COUNTY**—Arkansas Fuel Oil Co.'s Allen 2, 19-19-24, testing 2795 ft; Red River lands 1, 18-19-24, swabbing 2790 ft, 95 per cent salt water and 5 per cent oil. Ken-Saw Pet. Co.'s Red River Valley 2, 3-20-24, fsh 2820 ft. White et al's Roper 1, 27-16-23, dr 2245 ft.

**LITTLE RIVER COUNTY**—Grote et al's Allen 1, 2-13-29, sw 2952 ft.

**MILLER COUNTY**—Buzzard Bluff Oil Oil Co.'s Gillespie 1, 22-14-26, sd 655 ft. Copeland et al's Wiseman 1, 36-15-27, sd 2547 ft. Humble O. & R. Co.'s McKnight 1, 17-17-26, rig.

**NEVADA COUNTY**—Magnolia Pet. Co.'s Johnson 1, 3-15-21, dr 4350 ft.

**OUACHITA COUNTY**—Buffalo Oil Co.'s Morgan 4, 22-15-19, lcn. Equity Oil & Dev. Co.'s Morgan 1, 27-15-19, dr 900 ft. Gossett et al's Davis 1, 26-15-19, set 10-inch 44 ft; Thompson 1, 22-15-19, set 6⅝-inch 1473 ft, dr 1475 ft. Van Diver et al's Yarbrough 1, 22-14-17, sd 1600 ft.

**UNION COUNTY**—Bradley & Cazort's Miles 1, 21-17-15, sdtr 2575 ft. Gaho et al's Haney 1, 11-17-16, dk. Liberty Oil Co.'s Davis 1, 31-16-14, sw 2175 ft, sdtr to deepen. Owen et al's Porter 1, 4-17-16, bailed dry after shot at 2141 ft, sd. J. D. Reynolds' Dumas 1, 15-17-16, wosr 2160 ft, 25 ft oil in hole; Dumas 2, 15-17-16, dk. Rovenger et al's Dumas 1, 9-17-16, flowing 45 bbls oil 2078 ft; Dumas 2, 9-17-16, rig. Wingfield et al's Dumas 1, 9-17-16, dr 2080 ft. Simms Oil Co.'s Dumas A-1, 9-17-16, dk.


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# from oil well drilling

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# PERMITS GRANTED FOR NEW WELLS

## Weekly Comparison of New Wells

**Following is a condensed table giving a comparison of permits or locations made for new wells in Kansas, Oklahoma, Arkansas, Louisiana, Texas and California:**

**Number of Wells for Week Ending**

| | Oct. 9 | Oct. 16 | Oct. 23 | Oct. 30 | Nov. 6 | Nov. 13 | Nov. 20 | Nov. 27 | Dec. 4 | Dec. 11 | Dec. 18 | Dec. 25 | Jan. 1 | Jan. 8 | Jan. 15 | Jan. 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Kansas** | 35 | 37 | 16 | 22 | 23 | 21 | 37 | 35 | 29 | 35 | 28 | 32 | 40 | 30 | 23 | 28 |
| **Oklahoma** | 67 | 48 | 52 | 76 | 63 | 86 | 60 | 106 | 86 | 73 | 75 | 95 | 76 | 78 | 60 | 92 |
| **Arkansas** | 38 | 21 | 9 | 14 | .. | 18 | 10 | 16 | 10 | 22 | 11 | 15 | 10 | 18 | 10 | 12 |
| **Louisiana** | 12 | 13 | 11 | 6 | 9 | 15 | 6 | 15 | 17 | 15 | 15 | 7 | 12 | 15 | 17 | 20 |
| **Texas** | 179 | 133 | 183 | 202 | 156 | 171 | 174 | 126 | 253 | 203 | 210 | 199 | 167 | 111 | 162 | 153 |
| **California** | 22 | 27 | 23 | 18 | 16 | 23 | 25 | 23 | 23 | 22 | 42 | 40 | 17 | 25 | 28 | 35 |
| **Total** | 353 | 279 | 294 | 338 | 267 | 334 | 312 | 321 | 418 | 370 | 381 | 388 | 322 | 277 | 300 | 340 |

### KANSAS

**Butler County**—Greenland Oil & Kismet Oil Company's Daley 1, southwest corner of the southeast of 25-24-6e. Greenland & Kismet's Petts 1, northeast corner of 29-24-7e. White Eagle Oil & Ref. Co.'s Wilhite 2, northwest corner of the northeast of the southwest of 27-26-7. Amerada Pet. Corp.'s Kruse 1, northeast corner of the southeast of the northwest of 27-27-7; Kruse 2, northwest corner of the southeast of the northwest of 27-27-7. Greenland Oil Co.'s Jobe 2, northeast corner of the southeast of 28-27-7. Mid Kansas Oil & Gas Co.'s Troup 1, southeast corner of the northeast of 28-27-7. Allison & Fitzwilliams' Blankenship 1, southeast corner of the southwest of 3-28-6.

**Chase County**—Selby Oil & Gas Co.'s Leedy 1, northeast corner of the northwest of the southeast of 26-22-9.

**Clay County**—Vickers Pet. Co. et al's Fadley 1, southeast corner of the northwest of 7-9-4e.

**Coffey County**—Scott Creek Oil Co.'s Wade 1, southeast corner of the southwest of 23-21-16.

**Cowley County**—Paul Trees Oil Co.'s Mahoma 3, southeast corner of 6-30-8. Gypsy Oil Co.'s Hunt 2, southwest corner of the northwest of the southwest of 16-33-3; Hunt 3, northwest corner of the southeast of the southwest of 16-33-3. Waite Phillips & Marland & Independent's Allison 3, northwest corner of the northeast of the southeast of 29-33-3. Roxana Pet. Corp.'s Chapman 2, southwest corner of the southeast of 16-34-4; Chapman 3, twin, southwest corner of the southeast of 16-34-3e.

**Elk County**—Sharpless et al's Howard 1, southwest corner of the northeast of 14-30-9.

**Greenwood County**—Greenland Oil Co.'s De Malorie 3, northwest of the northeast of 12-22-10. Mid-Continent Pet. Corp.'s Clopton 7, southeast corner of the northwest of the southwest of 18-22-11. Greenland Oil Co.'s Craft Taylor 5, northwest corner of the southwest of 25-22-12. Mission Oil Co.'s Berry 1, northwest corner of the northeast of the southwest of 27-23-12. Perkins et al's Dibert 1, southeast corner of the northwest of 18-25-11.

**Lyons County**—Mississippi Valley Oil Co.'s Naussen 1, center of the northwest of the southeast of 25-20-10; Langley 1, center of the southwest of the southeast of 4-21-11.

**Russell County**—Tom Johnson's Kollman 6, northeast corner of the southeast of the northwest of 5-12-15w. Valerius Oil & Gas Co.'s Oswald-Valerius 14, southeast corner of the northwest of the northwest of 17-12-15w.

**Sumner County**—Phillips Pet. Co.'s Holt 3, northwest corner of the northeast of the southeast of 23-33-2e.


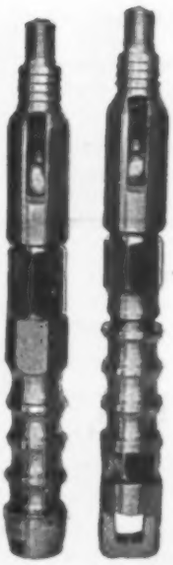

Fig. 22 Fig. 21

# NECO

## Traveling Valves

We wish to call attention to the rigid construction of NECO traveling valves. Note wide locknut and extension crowns. Fig. 22 has solid bottom rings and cups go on from top and cannot get loose in working barrel.

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H. T. Torner, Rep.


### OKLAHOMA

**Kay County**—Comar Oil Co.'s McCormick 3-B, northeast corner of the southeast of the southwest of the southeast of 21-29-1w; McCormick 4, old well deepened, southwest corner of the northwest of the southeast of 21-29-1w; Harvell 7, southeast corner of the southwest of the northeast of 21-29-1w. Carter Oil Co.'s Meyer 1, northeast corner of the northwest of the northeast of 29-29-1e. Marland Oil Co.'s North 4, northwest corner of the southeast of the northwest of the northeast of 12-26-2w, old well deepened.

**Grant County**—Brazell & Moses' Royce 1, southwest corner of the northwest of 34-26-4w.

**Noble County**—Geo. Miller's 101 Ranch 1, northeast corner of 1-24-1e. Hartman & Skaer 1, northwest corner of 18-22-2w.

**Pawnee County**—Watchorn Oil & Gas Co.'s Miller 7, old well deepened, southwest corner of the southeast of the southwest of 33-23-3e. Gypsy & Selby's Mullendore 17, center of the west line of the northwest of the northwest of 1-20-7e. Enfisco Oil Co.'s Peacock 1, old well deepened, northeast corner of the southeast of 2-20-7. Selby Oil & Gas Co.'s Van Eman 4, center of the east line of the northeast of the southeast of 23-20-8.

**Garfield County**—Wilcox Oil & Gas Co.'s Zalondek 1, center of the southeast of the southeast of the southeast of 22-24-6w. Shaffer-Gardner's Brunkin 1, northwest corner of the northeast of 32-24-4w. Mid-Continent Pet. Corp.'s Wishard 17, center of the southeast of the southwest of the southeast of 12-22-4w; Wishard 18, center of the southwest of the southwest of the southeast of 12-22-4w. Cosden & Marland School land 62, northeast corner of the southeast of the southeast of the southeast of 13-22-4w. Roxana Pet. Co.'s Wolfe 4w, center of the southeast of the northeast of the northwest of 13-22-w; Wolfe 5w, center of the northeast of the northeast of the northwest of 13-22-4w. Imo Oil Co.'s McLean 5, center of the west line of the northeast of the northwest of 31-22-3w.

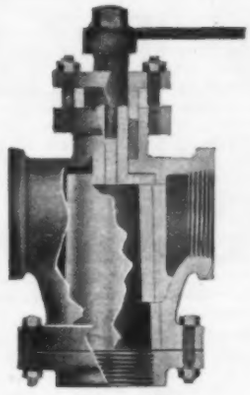
**Woodward County**—Small-Kennessey's No. 1, northeast corner of the northwest of 34-20-20w, old well deepened.

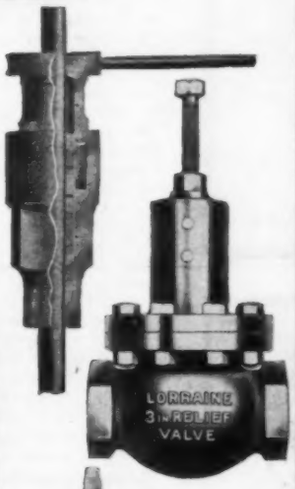
**Dewey County**—Huckleby-McCoy Perfect 1, northeast corner of 9-18-15w.

**Osage County**—Titus & Norris' No. 1, center of the north line of the northeast of 29-25-12.

**Lincoln County**—Amerada Pet. Corp.'s Belless 6, southeast corner of the northwest of the southwest of 3-14-5; Belless 7, southwest corner of the northeast of the southwest of 3-14-5; Belles 5, southwest corner of the northwest of the southwest of 3-14-5. Magnolia Pet. Co.'s Thompson 4, southwest corner of the southeast of the northeast of 4-14-5; M. & F. Chapman 1, northeast corner of the southeast of 10-14-5.

**Creek County**—Texas Pacific Coal & Oil Co.'s Brown 4, southwest corner of the northwest of the northeast of 12-14-8. Kilgore et al's Elliott 1, southwest corner of the northeast of 1-18-9. Wynona Oil Co.'s Unallotted 1-A, northwest corner of the southwest of the north-





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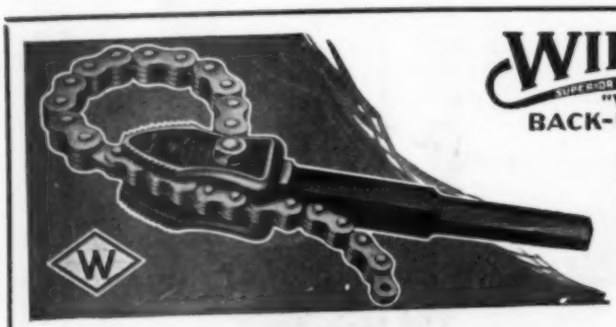

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New York BUFFALO Chicago


east of 17-18-9. J. A. Hull & Co.'s Walker 1, southwest corner of 21-18-9. D. B. Mason Doyle 1, southeast corner of the northwest of the northeast of 21-17-9, old well deepened, and now completed. C. G. Tibbens' Unallotted 2, center of the east line of the southwest of the southwest of 30-15-9. Skelly Oil Co.'s Bruner 2, old well deepened, northeast of the northwest of the southeast of 29-11-10. Donnelly et al's Scott 1, northwest corner of the southeast of 20-14-10. Skelly & Billingslea Lucas 5, southwest corner of the northwest of the northwest of 31-15-9.

**Tulsa County**—Underwood et al's J. Brown 4, center of the east line of the southeast of the northwest of 30-19-12. Hawk et al's Cowan 1, southeast corner of the northwest of the southwest of 7-19-14.

**Okmulgee County**—Sheldon Oil Co. et al's Doneghy 2, southwest corner of the northwest of the southwest of the southwest of 20-16-12. D. D. Michelson Adams 8, southeast corner of the northwest of the southwest of 20-15-12. The Texas Company Ard 1, northwest corner of the southwest of 22-14-12. Kingwood Oil Co.'s Arbitt 1, southeast corner of 21-14-12. T. A. Johnson's No. 3, southwest corner of the northwest of the southwest of the northwest of 22-14-12.

**Okfuskee County**—North Baltimore Oil Co.'s 7 Sugar, twin, southwest corner of the northwest of the northeast of 13-12-11. Amerada Pet. Corp.'s Harjo 12, southeast corner of the northeast of the northwest of 13-12-11. Josey Oil Co.'s Fields 4, old well deepened, southeast corner of the northwest of the northwest of 33-12-11. Empire Gas & Fuel Co.'s Grayson 1, northwest corner of the northeast of the northwest of the northeast of 30-11-10, old well deepened. Atlantic Oil Prod. Co.'s Jefferson 8, center of the southwest of the northwest of 16-11-11. Riverland Oil Co.'s Barnett 1-A, southwest corner of the southeast of the southwest of 19-11-11, old well deepened.

**Pottawatomie County**—Sikes, Kilgore & Shaffer Ives 1, center of the southeast of 12-10-3e.

**Seminole County**—The Texas Co.'s Brown 1, southeast corner of the northwest of 10-9-5. Independent Oil & Gas Co.'s Ingram 1, southwest corner of the northeast of 10-9-5. Magnolia Pet. Co.'s M. Parker 1, southwest corner of the southeast of the southwest of 32-8-8; Parker 2, southeast corner of the southwest of 32-8-8; Harjo 4, center of the west line of the southeast of the northwest of 5-7-8. Amerada Pet. Corp.'s P. Harjo 2, northeast corner of the northwest of 5-7-8; P. Harjo 3, center of the west line of the southwest of the northeast of the northwest of 5-7-8.

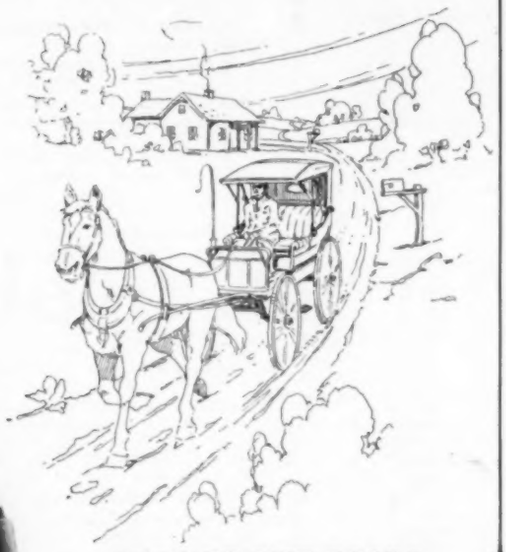
**Hughes County**—Independent Oil & Gas Co.'s Alexander 2, northeast corner of 2-9-9, old well deepened. Papoose Oil Co.'s Alexander 10, northwest corner of the northeast of the southeast of 4-9-9, old well deepened.

**Grady County**—Magnolia Pet. Co.'s Dryden 1, center of the northwest of the southeast of 35-5-8w; Duke 2, center of the northeast of the southwest of 35-5-8w; Smith 5, center of the southwest of the northeast of 35-5-8w. Carter Oil Co.'s Gardenshire 1, south east corner of the southwest of the southwest of 5-3n-5w, old well deepened. Magnolia's Cochran 1, southwest corner of the southeast of 27-3n-5w. Carter Oil Co.'s Schramack 2, center of the southeast of the southwest of the southwest of 5-3n-5w; Lindsey 2, northeast corner of the northwest of the southeast of the southwest of 35-3n-5w; Abernathy 1, southeast corner of the southwest of the northeast of the southwest of 35-3n-5w. Garvin Drilling Co.'s Lindsey 2, northwest corner of the northeast of the southeast of the southwest of 35-3n-5w.

**Comanche County**—Becker et al's Hallum 3, northwest corner of the southeast of the south west of 3-3n-10w. Daisy Bell Oil Co.'s Warehire 1, center of the southwest of the southwest of 34-4n-9w.

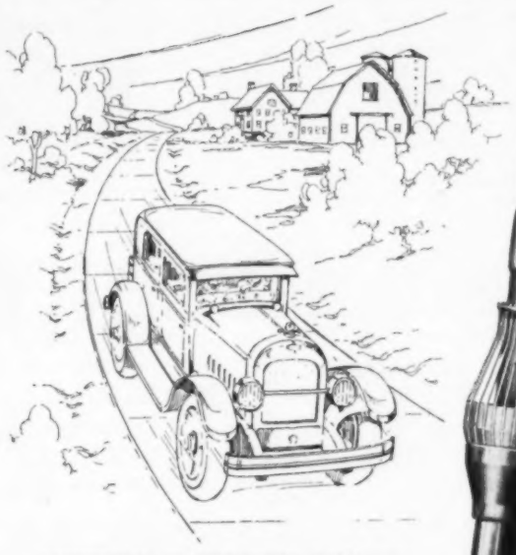
**Stephens County**—Flowers et al's Turner 1, northeast corner of 25-2n-9w. Carter Oil Co.'s Goza 2, southeast corner of the southwest of the northeast of 2-2n-5w. Amerada Pet. Corp.'s Blaydes 1, northwest corner of the northeast of the northeast of 32-1s-8w, old well deepened. Gant et al's Smith 7, southwest corner of the northwest of the northeast of 32-1s-9w, old well deepened. McMann Oil Co.'s Stephens 8, northwest corner of the southwest of the northwest of 33-1s-8w, old well deepened. Commercial Pet. Co.'s Fobb 8-A, northeast corner of the southeast of the southwest of 12-2s-8w.

# FALSE *economy*



BUGGIES, DIRT ROADS, AND OLD STYLE SWABS

# TRUE *economy*



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# GUIBERSON

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Burris & Stahl's Melton 1, center of the northeast of the southwest of 33-3s-6w.

**Jefferson County**—A. C. Brown's Indian 2, center of the east half of the northeast of the northwest of 33-6s-5w. Carter Oil Co.'s Jones 2, center of the west half of the northwest of the northeast of 33-6s-5w. Culbert & Lyle Truitt 1, northwest corner of the southeast of the southwest of 3-7s-6w.

**Garvin County**—Magnolia Pet. Co.'s A. Ringer 3, northeast of the northwest of the southwest of the northwest of 11-1n-3w; Harris 8, center of the southeast of the northeast of the southwest of 16-1n-3w. Texas Pacific Coal & Oil Co.'s Butts 3, center of the northeast of the southeast of the southwest of 16-1n-3w. The Texas Co.'s Dryden 11, center of the southeast of the southeast of the northeast of 17-1n-3w. Texas & Pacific Coal & Oil Co.'s Boutwell 1, center of the northwest of the northwest of the northwest of 21-1n-3w. Carter Oil Co.'s Deryden 6, southeast corner of the northwest of 17-1n-3w.

**Pontotoc County**—O. F. Smith's Lloyd 1, center of the northwest of the northeast of the northwest of 28-3n-3e.

**Carter County**—Magnolia Pet. Co.'s E. Lohman 9, center of the northwest of the northeast of the southeast of 23-2s-3w. Amerada Pet. Corp.'s Farve 23, center of the southeast of the southwest of the northeast of 20-5s-1e; Geo. Fish 14, northeast corner of the southwest of 28-5s-1e; Ledbetter 2, center of the east line of the west half of the northwest of the northwest of 34-5s-1e.

## LOUISIANA

**Bossier Parish**—Autrey Oil Co.'s Connell et al 1, 15-19N-11W, 1220 ft W and 1220 ft N of SE cor of sec.

**Caddo Parish**—Dixie Oil Co.'s Dillon 71, 14-21N-15W, 2340 ft W and 2630 ft S of NE cor of sec. Fortuna Oil Co.'s Raines 23, 22-21N-15W, 195 ft N and 540 ft W of SE cor of NE¼ of NE¼. Gulf Ref. Co. of La.'s Muslow Oil Co. E-1, 35-21N-15W, 200 ft S and 200 ft E of NW cor of SW¼; Ferry Lake 227, 16-20N-16W, 1600 ft N and 1500 ft W of SE cor of sec. Odell & Lawton et al's Red Bayou 4, 15-21N-15W, 175 ft N and 235 ft E of SW cor of SE¼ of NE¼.

**Claiborne Parish**—Triangle Drlg. Co.'s Meadors 1, 7-22N-5W, 330 ft S and 330 ft W of NE cor of sec.

**La Salle Parish**—O. W. Clark, Tr., Russell 1, 26-10N-1E, 660 ft S and 150 ft W of NE cor of SE¼. James Galloway's Pendarvis 1, 24-10N-1E, 400 ft N and 625 ft E of SW cor of sec. H. M. Jones, Tr., King 1, 36-10N-1E, 150 ft N and 150 ft E of SW cor of NW¼ of NE¼. Cleve Love et al's Zimmerman 1, 25-10N-1E, 200 ft S and 150 ft E of NW cor of NE¼ of SW¼. Tullos Oil Co.'s Miles 1, 25-10N-1E, 200 ft S and 300 ft E of NW cor of SW¼ of NW¼. Standard Oil Co.'s Urania Lbr. Co. 1, 19-10N-2E, 117 ft S and 162 ft E of NW cor of sec; Urania Lbr. Co. 2, 19-10N-2E, 200 ft N and 200 ft W of SE cor of NW¼ of NW¼; Urania Lbr. Co. 3, 19-10N-2E, 200 ft S and 200 ft W of NE cor of NW¼ of NW¼; Urania Lbr. Co. 4, 19-10N-2E, 200 ft N and 200 ft E of SW cor of NW¼ of NW¼.

**Ouachita Parish**—J. M. Huber Co. of La.'s Fee 7, 30-19N-5E, 1980 ft N and 1980 ft W of SE cor of sec. The Palmer Corp.'s Fee 1, 24-19N-4E, 1957 ft W and 710 ft S of NE cor of sec.

**Red River Parish**—Fortuna Oil Co.'s Kemp Bonds 1, 27-12N-11W, 1260 ft S and 1520 ft W of NE cor of sec.

**Webster Parish**—Fortuna Oil Co.'s Tiner 1, 21-21N-10W, 330 ft S and 330 ft W of NE cor of SE¼ of NW¼.

## CALIFORNIA

**Huntington Beach Field**—Standard Oil Co.'s Huntington B-43, 4-6-11; Huntington A-30, 34-5-11. Julian Pet. Corp.'s Farnsworth 1, 7-6-10.

**Alameda County Field**—Thomas & Hammell's No. 1, 16-3-3.

**Inglewood Field**—Pacific Oil Co.'s No. 19, 8-2-14. Standard Oil Co.'s Stocker 4, 16-2-14; Los Angeles Investment 1-39, 17-2-14; Los Angeles Investment 1-40, 17-2-14.

**Brea Olinda Field**—Union Oil Co.'s Stearns 66, 1-3-10; Stearns 67, 1-3-10.

**Kern County Field**—Milham Exploration Co.'s Howard Sisson 1, 10-28-23. A. G. Schwarz's No. 1, 25-29-26.

**Long Beach Field**—Lindauer Oil Co.'s No. 4, 13-4-13. A. J. Delaney's Delaney 19, 13-4-13. Tryon & Brain's Lineberger 1, 13-4-13. McKeon Oil Co.'s No. 7, 13-4-13. United Oil Co.'s Cook 1, 13-4-13; Taylor 2, 13-4-13. Keck & McWhorter's No. 2, 13-4-13; No. 3, 13-4-13; No. 4, 13-4-13.

**Los Angeles County Field**—Jeffrey, Overton & Halfhill's Jeffrey 1, 13-11-14. Milham Exploration Co.'s Playa Del Rey 2, 34-2-15. Burlington Pet. Corp.'s Dubin 1, 11-4-12. Union Oil Co.'s McNally 1, 22-3-11. D. & B. Oil Co.'s No. 1, 3-2-10.

**McKittrick Field**—Mendocino-Midway Oil Synd.'s No. 1, 28-29-21.

**Midway Field**—North American Oil Consolidation's No. 33, 30-21-24; No. 31, 30-21-24. Pan American Pet. Co.'s No. 3, 19-31-23.

**Newport Field**—Julian Pet. Corp.'s Strowbridge B-1, 21-6-10.

**San Diego County Field**—George O. MacGregor's No. 1, 19-16-3.

**San Luis Obispo County Field**—Kerntaft Pet. Co.'s No. 1, 35-12-25.

**Torrance Field**—Shell Co.'s Redondo Community 8, 9-4-14; C. C. M. O.'s Del Amo 29, 9-4-14.

## ARKANSAS

**Nevada County**—Bemis et al's Ellis 1, 2-14-21, NWc SE¼ SE¼.

**Ouachita County**—Gulf Ref. Co.'s R. Bennett 9, 33-15-15, 300 ft N and 990 ft E of SWc of section. Magnolia Pet. Co.'s Shirey 2, 30-15-16, NWc SE¼ SE, in Louann townsite. Owenwood Oil Corp.'s Snyder 11, 34-15-15, center of west line SE¼ SW¼ SW¼. Unity Pet. Co.'s Berry 4, 33-15-15, SWc NW¼ SW¼.

**Union County**—Arkansas Fuel Oil Co.'s Ferguson 8, 6-16-15, NEc NW¼ SW¼. Bradley & Cazort's Miles 1, 21-17-15, Lot 1, SW¼ NE¼, El Dorado townsite. Federal Pet. Co.'s Ballard 6, 10-16-15, center of south line SW¼

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Boiler Tubes

Charcoal Iron
for bad water conditions—

Lapweld Steel
for good water conditions—

For long tube life.

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PIPE in all sizes, rigidly inspected and fitted with new threads and couplings, 1" to 16", new and used—all guaranteed in first class order.

CASING in sizes 5 3/16" to 15¼", standard and DBX. Warranted equal to new in grade and workmanship of threads, collars and protectors.

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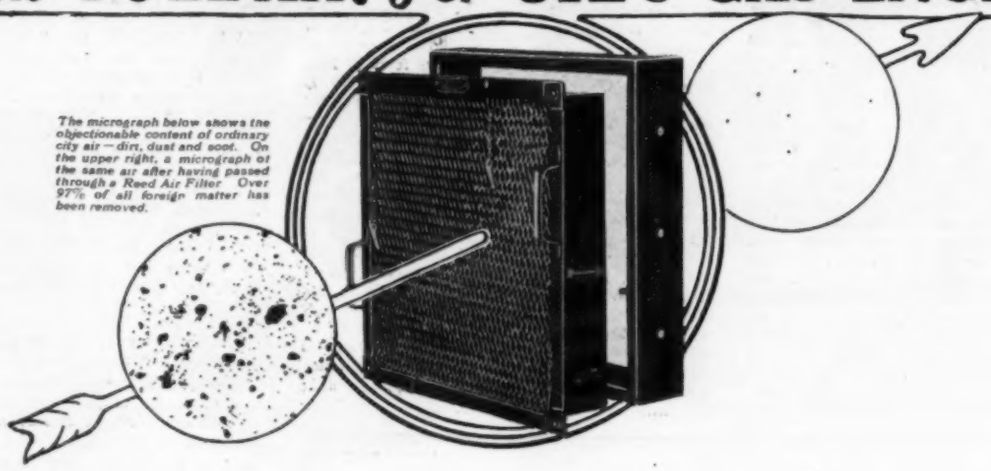
*Say you saw it in The OIL WEEKLY*

# Clean "FUEL AIR" for OIL & GAS ENGINES



*The micrograph below shows the objectionable content of ordinary city air — dirt, dust and soot. On the upper right, a micrograph of the same air after having passed through a Reed Air Filter. Over 97% of all foreign matter has been removed.*

# Clean Air *for* Your Engine

The two micro-photographs shown above prove that air is not free of dirt.

Test the air that goes through the intake of your engine.

It will show sand—grit—dirt—abrasive substances that wear cylinder walls, rings and pistons, rapidly.

The result is loss of power—worn bearings—crank case dilution—expensive shut-downs and repairs

A Reed Air Filter on the intake stops this expense.

Only clean air can reach the engine—air free of all abrasive substances that induce repairs and costly shut-downs.

It is a necessity on every engine in the oil field. Any engineer will tell you so.

This Filter is now available to the Oil Industry. It is going to fill a need felt by every engine user.

**Reed Air filters** TRADE ALL METAL MARK

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## REED AIR FILTER COMPANY INCORPORATED, LOUISVILLE, KY.

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LONDON OFFICE
Perkins MacIntosh Petroleum Tool & Boring Co., Ltd.,
25 Bishopsgate; Cable Address, "Oleborers" London

*Say you saw it in The OIL WEEKLY*

SE¼. E. M. Jones' Murphy 1, 17-16-15, 150 ft N and E of SWc N½ NW¼ NE¼. Lion Oil & Ref. Co.'s Murphy C-9, 8-16-15, SWc SE¼ SW¼; Murphy D-5, 8-16-15, SWc SW¼ SE¼. Sam Richardson & Co.'s Lawton 3, 10-16-15, N½ S½ SW¼ SW¼. Thurman et al's Wilson 1, 6-16-15, NWc SE¼ SW¼.

## TEXAS

**Archer County**—Murchison & Fain Oil Co., Wichita Falls, W. F. Niemeyer 1, 2415 TE&L sur, center; L. M. Hayter 1, 2423 TE&L sur. Geo. L. Pace, Staley Bldg., Wichita Falls, J. B. Miller 1D, B 20, Amer. Trib. sur, 150 ft to E and 450 ft to S line. Prairie Oil & Gas Co., Ranger, J. Kreeger 2, 2434 TE&L sur, 430 ft W No. 1. Shappell Oil Co., Wichita Falls, J. L. Jackson 39, B 23, D.C.S.L. sur, 150 ft to S and W lines. Sansfield & Maxwell, Wichita Falls, R. L. Sloop 1, S 8, H&TC Ry sur, 1300 ft to W and 300 ft to N line. Burns & Maxson, First Nat. Bank Bldg., Wichita Falls, E. I. Brown 4, Amer. Trib. sur, 447 ft to N and 150 ft to W line. Darilek Lease Acct., Waggoner Bldg., Wichita Falls, J. Darilek 7, 1582 TE&L sur, 300 ft E No. 6. Roy I. Carter, City Nat. Bank Bldg., Wichita Falls, L. F. Wilson 1, J. C. S. L. sur, Lot 9, 150 ft to N and W lines. Consolidated Oil Co. of Texas, Wichita Falls, G. K. Feldhauser 1, A. Edwards sur, 150 ft to N and 388 ft to E line. Gulf Prod. Co., Fort Worth, L. M. Hayter 1, 2423 TE&L sur, 150 ft to N and E lines; M. Wear 5, B 8, I. Holman sur, 300 ft W No. 3; E. S. Monohan 25, 1599 TE&L sur, 400 ft S No. 23. Atlantic Oil Prod. Co., Magnolia Bldg., Dallas, G. L. Gadberry 1, 227 TE&L sur (Young County); M. P. Andrews 1, F. Whitaker sur, 150 ft to S and E lines. Wichtex Oil Co., Waggoner Bldg., Wichita Falls, L. F. Wilson 7, B 29, Amer. Trib. sur, 150 ft to E and 170 ft to S line. Bailey-Damuth Drilling Co., Waggoner Bldg., Wichita Falls, S. M. Gose 1, B 8, Amer. Trib. sur, 150 ft to S and W lines. Riner & Bailey, Wichita Falls, L. F. Wilson 1, Amer. Trib. sur, 150 ft to N and E lines. McCarty Oil Co., Bob Waggoner Bldg., Wichita Falls, L. F. Wilson 16, E. Hall sur; 17, same sur. Pandem Oil Corp., Box 256, Wichita Falls, Seymour 1, 2433 TE&L sur. Humble Oil & Ref. Co., Wichita Falls, L. F. Wilson 6, S 125, Amer. Trib. sur. Ted Harris, 803 Broad St., Wichita Falls, Trinity Townsite 1, 2433 TE&L sur, 150 ft to S and W lines. F. P. Cullum, Box 1020, Wichita Falls, Mangold 1, B 7, Mangold sur, 150 ft to N and E lines. Magnolia Petroleum Co., Dallas, A. J. Lowe 13, B 2, I. Holman sur, 300 ft S No. 12; C. Portwood 8, 1581 TE&L sur, 320 ft W No. 7. Phillips Pet. Co., Bartlesville, Okla., E. R. Boyles 3, B 63, F.C.S.L. sur, 150 ft to E and 1049 ft to N line. V. O. E. Wright, 620 Eighth St., Wichita Falls, W. B. White 1, B 18, D.C.S.L. sur, NE corner. Texas Co., Wichita Falls, R. E. Hill 18, 2408 TE&L sur, 646 ft to N and 1774 ft to E line. Texhoma Oil & Ref. Co., Wichita Falls, Texas. S. E. Oldham 19, E. Hubbell sur, 150 ft to W and 490 ft to S line. Meyer & Bevering, Henrietta, W. J. McMurty 1, A. Nunley sur, 150 ft to N and 450 ft E line.

**Atascosa County** — Frontier Oil Co., City Nat. Bank Bldg., San Antonio, S. J. Langley 9, J. Sharp 518 sur, 750 ft to N and 150 ft to E line.

**Brown County**—Geo. E. Lamb, Brownwood, V. Leach 6, M. Flores 674 sur, 1200 ft to E and 170 ft to S line. B. D. Dozier et al, Cross Plains, W. A. Prater 6, W. B. Travis sur, 300 ft W No. 2. Inland Oil Co. & Elms, Brownwood, J. A. Parker 1, S. O. Fowler sur, 150 ft to N and 300 ft to W line. J. H. Davis, Brownwood, R. Counts 1, M. Flores sur, 150 ft to S and E lines. Owens Oil Co. & Shuler, Davies Co., Brownwood, G. M. Grooms 6, J. M. Ross sur, 317 ft E No. 3. E. M. Treat & Co., Union Bank Bldg., Pittsburgh, Pa., R. Anderson 1, S. Durr sur, B 161, 1690 ft to N and 1020 ft to E line.

**Bell County**—J. B. Hartman Drilling Co., Belton, B. F. Warrick 1, A. Webb sur, 1000 ft to E and 185 ft to S line.

**Bexar County**—M. J. Arnold, City Nat. Bank Bldg., San Antonio, M. Klemcke 1, 272 A. McSnyder 200 ft to W in center of line.

**Brazoria County**—Rycade Oil Corp., Humble Bldg., Houston, W. R. Nash 6, T. Allsberry sur, 500 ft to N and 1000 ft to W line.

**Bastrop County** — Andrews Petroleum Corp. & L. I. Dodwell, San Antonio, J. Dinadidge 1, E. Harriss sur, 1000 ft to E and 150 ft to S line.

**Callahan County**—H. H. Simons, Putnam, H. Wagley 2, 2999 TE&L sur, 450 ft to S and W lines. Warren & Hayes, Box 576, Cisco, W. D. Clinton 1, S 15, Bayland Asy. sur, 150 ft to S and W lines. H. M. Henderson, Box 16, Breckenridge, J. S. Burnam 3, 2288 TE&L sur, 450 ft to E and 150 ft to N line. M. A. White et al, Moran, A. W. Warren 2, TE&L sur, 300 ft S No. 1. Prairie Oil & Gas Co., Ranger, E. J. Eubanks 4, S 4, D&D Asy. sur, 365 ft S No. 3. W. R. Andrews et al, Putnam, R. D. Williams 49, 2974 TE&L sur, SW cor. J. A. Jones, Moran, A. W. Warren 5, 2039 TE&L sur, 460 ft to N and 155 ft to W line. Cranfill & Reynolds, Cisco, Leveridge 1, S 318 S. P. Ry sur, 150 ft to S and E lines. H. M. Henderson, Box 16, Breckenridge, J. S. Burnam 4, 2288 TE&L sur, 150 ft to N and W lines. Ashley & Roach, Box 274, Vernon, T. E. Hayden 3, 115 Univ. Lands sur, 150 ft to W and 450 ft to N line. C. O. Moore et al, Cross Plains, W. Franke 16, CCSL sur, 30 ft N No. 15. Godley Oil & Gas Co., Putnam, M. Kennedy 11, S 8, Bayland Asy. sur, 300 ft S No. 7. Canyon Oil & Gas Co., Inc., Cross Plains, M. Kennedy 3, Bayland Asy. sur, 300 ft N No. 2.

**Caldwell County** — Reiter-Foster Oil Corp., Mexia, J. Brown 1, P. M. Cannon sur, 160 ft to W in center of line. C. N. White, 120 West Park Ave., San Antonio, F. A. Cardwell 1, 150 ft to N and E lines. United North & South Oil Co., Luling, A. Mercer 13, Reaville-Caldwell sur, 396 ft SW No. 6. Lucey Pet. Co., Magnolia Bldg., Dallas, H. E. Palmer 7, F. Castillo sur, 300 ft NE No. 6.

**Coleman County** — Allen, Knight & Pierce, Coleman, J. Terry 1, S 92, C.C.S.L. sur, 150 ft to N and E lines. Owen & Sloan, Colorado, G. M. Baker 1, W. Cole sur, S 705, 935 ft to W and 1707 ft to S line. Archer Shaw, Burkett, W. T. Barns 1, A. Wickson sur, 150 ft to N and E lines.

**Clay County** — Lone Star Gas Co., Dallas,


# *It's all here, folks!*

THE MAKERS of the steel which goes into Stewart Safety Sucker Rod Hooks wrote us for a photograph of the product. We sent the one from which the cut used in this advertisement was made.

They wrote us by return mail to know if something hadn't been left out of the picture. They felt that there should be some trigger work. It simply didn't look like other and more complicated hooks they had seen advertised.

Folks, it's all here. Its strength lies in its simplicity. No power on earth except the gentle touch of a man's hand can lift the safety latch, once it's down.

If your supply store doesn't have this Hook write the Walter O'Bannon Co., sole distributors, Tulsa, Oklahoma.

***GOOD PEOPLE TO DO BUSINESS WITH***

**Pelican Well Tool & Supply Co.**

**General Offices: Shreveport, La.**

# Facts

**you can always depend on them**

Patented in the U. S. A. July 20, 1915. No. 1147108; October 17, 1916; No. 1201483; March 19, 1921, No. 15075 (Reissue) Manufactured under the Guiberson-Richard Patent of March 14, 1916, No. 1175298. India, Feb. 27, 1920, No. 5360; Great Britain, May 25, 1921, No. 163802. Other foreign patents pending.

Here's a tubing catcher that proves its caliber through actual performance in the well. It has demonstrated its superiority so many times and so forcefully that it is fast becoming recognized as one tool of its kind that insures as high a factor of safety as is physically, humanly, and mechanically possible to achieve.

## Don't Take Our Word for This

Here are samples of the many voluntary, enthusiastic and kind reports to us of its performance for prominent users.

### Not One Failure in 4 Years

"I have in Osage County about one hundred fifty Dunn Safety Automatic Tubing Catchers, some of them have been in use for four years and in that time I have had approximately 25 strings of tubing to part where a catcher was on the string and they have worked on every occasion." J. G. HUDSON, OKLAHOMA PRODUCING AND REFINING CORPORATION OF AMERICA.

### Eleven Strings Saved When Derricks Blown Over

"The Roxana Petroleum lost eleven derricks in two wind storms which occurred March 27th and June 9th, respectively. We were using the Dunn Safety Automatic Tubing Catcher in each of the eleven wells over which these rigs were blown down. In each case the tubing was broken off when the rig blew down, but all the Catchers functioned properly with the result that the tubing was recovery without difficulty." EARL M. McBRIDE, Superintendent, ROXANA PETROLEUM CORPORATION.

*In order to properly demonstrate to you that the Dunn Catcher is indispensable to safe oil well operation, we will ship one or more to any responsible user, charges prepaid, without obligation. Put it to the most severe test possible, and if not convinced of its merit and superiority, return at our expense.*

**DUNN MANUFACTURING COMPANY**

Office and Works: Oxnard, California

**DUNN SAFETY**

*The Symbol of Safety*

OIL WELL DUNN TOOLS

*in Oil Field Practice*

Holloway 19, B 28, P.C.S.L., sur, 1747 ft to W and 160 ft to S line; 20, same sur, 500 ft to E and 250 ft to S line.

**Crane County**—Independent Oil & Gas Co., F & M Bank Bldg., Fort Worth, L. Taylor 1, S 6, H. T. Sapp sur, NE corner.

**Eastland County**—States Oil Corp., Eastland, A. H. Johnson 1, S 61, H&TC Ry sur. Knox-Lewis Oil Co., Eastland, Wright-Eison 1, T. Tyloer sur, 200 ft to W and 800 ft to S line. C. M. Root, Eastland, E. N. Strickland 1, S 45 H&TC Ry sur, 1000 ft N and 300 ft to E line. L. Teatsorth et al, Eastland, J. M. Scott 8, S. J. Robinson sur, 400 ft SW No. 7.

**Fort Bend County**—Rycade Oil Corp., Humble Bldg., Houston, L. Meier 3, H. N. Cleveland sur, 300 ft to N and 2900 ft to E line; D. Flessner 2, T. Allsberry sur, 1300 ft to W and 150 ft to S line. Gulf Prod. Co., Houston, T. W. Davis 27, M. Young sur, 300 ft NW No. 20.

**Garza County**—Deep Rock Oil Co., W. T. Waggoner Bldg., Fort Worth, S. M. Swenson 1, B 2, H&GN Ry sur, center of sec 36.

**Guadalupe County**—United North & South Oil Co., Luling, J. E. Allen 37, H. Cottle sur, 414 ft NE No. 34.

**Hardin County** — Kirby Petroleum Co. & Capitol Oil Co., Batson, W. E. Hodges 4, M. Harris sur. Navarro Oil Co., Houston, R. L. Autrey 1, M. Harris sur, 30 ft to W and 50 ft to S line. Vacuum Oil Co.'s Gulf Bldg., Houston, R. Teel 3, T. C. Gaines sur, 500 ft to S and W lines. Acorn Oil Co., Beaumont, Paraffine 59, Knight sur, 231 to N and 167 ft to W line.

**Hutchinson County**—Sunny Jim Oil Co., Central Nat. Bank Bldg., Tulsa. J. A. Whittenburg 1, S 12, B Y, No. 12 250 ft to N and W lines. Dunn & McMillen, Massie Bldg., Amarillo, J. A. Whittenburg 1, M. Whitley sur No. 1, 330 ft to S and E lines. Jas. E. Dunn, Massie Bldg., Amarillo, G. Whittenburg 2, S 62, B 46, H&TC Ry sur, 600 ft to W and 860 ft to S line.

**Harris County** — A. L. Fondren, Houston, Mason 1, R. Dunman sur, 100 ft to N and 75 ft to E line. Navarro Oil Co., Houston, H. C. Cain 1, S 98, J. E. Hamilton sur, 500 ft N of Texas No. 1A.

**Harrison County** — Jno. Woodley, Giddens-Lane Bldg., Shreveport, La., C. M. Abney 2, J. Bryant sur, 350 ft to N and E lines.

**Howard County** — Owen & Sloan, Colorado, O. Chalk 1, S 113, B 29, W and N 330 ft S and E lines.

**Jefferson County**—Gulf Prod. Co., Houston, Gladys 219, J. A. Veatch sur, 130 ft to N and E lines, blk 37; C. W. Burrell 1, W. H. Smith sur, 1631 ft to S and 667 ft to W line.

**Jim Hogg County**—Rydal Oil Corp., Texas Nat. Bank Bldg., San Antonio, T. Vela 2, blk 17, 150 ft to N and W lines.

**Kleberg County**—Humble Oil & Ref. Co., Houston, R. G. Flato 2, S 40, B 10, KT&I 150 ft to N and E lines.

**Liberty County**—Humble Oil Ref. Co., Houston, Guedry 20, J. Devore sur, 400 ft N No. 19.

**Milam County**—W. A. Jones, Minerva, G. Banzahf 1, T. J. Chambers sur, 600 ft to E and 280 ft to S line. Groneman Bros., Taylor, West 1, J. Chambers sur, 150 ft to N and W lines. Rockdale Dev. Co., Inc., Rockdale, W. E. Gaither 5, Chambers sur, 300 ft SE No. 2. Union Prod. & Power Co., Rockdale, J. F. Holiman 1, W. W. Hill sur, 150 ft to S and W lines. Ellison Oil Co., Thorndale, E. T. White 1, T. S. Arnett sur, 150 ft to N in center of line.

**Mitchell County** — California Co., Colorado, C. M. Adams 2, S 11, B 28, T&P Ry sur, 330 ft to S and W lines; W. R. Womack 4, S 11, B 28, T&P Ry sur, 330 ft to N and E lines. Magnolia Petroleum Co., Dallas, A. P. Watson 1, S 20, B 29, T&P Ry sur, 330 ft to N and W

**Montague County**—Wood, Benton, Lesh & McCall, Box 218, Nocona, R. Hynds 2, J. Walls sur, 300 ft S No. 1.

**Potter County**—Gates Oil Co., Braniff Bldg., Oklahoma City, Okla., Kingsland 1, S 4, B Y, 330 ft to N and W lines.

**Shackelford County**—W. R. Tomlinson et al, 1503 Ave. D, Cisco, B. Brooks 3, S 91, Univ. Lands sur, 150 ft to W and 160 ft to S line Alex. Sommer & Son, Box 684, Moran, L. T. Wild, 6, S 69, Univ. Lands sur, 300 ft N No. 3. Roberts, Chadwick & Payne, South Bend, C. Arndt 2, 597 TE&L sur, 450 ft to SW & 750 ft to SE line. Hodges & Engel, Box 325, Albany, J. B. Matthews 2, S 29, E. T. Ry sur, 164 ft to N and 490 ft to E line. Hotchkiss & Willard, Baird, C. B. Snyder 3, S 59 L.A.L. sur, 420 ft to E and 150 ft to S line. Graham & Lash, Moran, J. T. Cockrell 5, S 6, L. A. L. sur, 450 ft to E and 150 ft to S line. Leslie Spoonts, Cisco, W. Poindexter 1, S 46, Blind Asy. sur, 2540 ft to W and 150 ft to S line; W. Poindexter 1, S 45, Blind Asy. sur, 330 ft to N and E lines. Terry Bros., Moran, I. G. Hadley 2, S 64, L. A. L. sur, 450 ft to S and W lines. G. H. Taylor et al, Moran, M. A. Crow 1, 18 TE&L sur, 150 ft to S and E lines.

**Stephens County**—Texas Co., Cisco, J. C. Curry 12, 3392 TE&L sur, 947 ft to E and 982 ft to S line. J. W. Enes, Box 401, Breckenridge, W. T. Sikes 1, S 13, T&P Ry sur, 425 ft to E and 250 ft to S line.

**Sterling County**—Deep Rock Oil Co., W. T. Waggoner Bldg., Fort Worth, L. T. Clark 1, S 17, B 15, H&TC Ry sur, 330 ft to N and 1370 ft to W line.

**Wichita County**—Petroleum Prod. Co., City Nat. Bank Bldg., Wichita Falls, H. Willis 7, BBB&C Ry sur, 672 ft S No. 4. Conrey, Williams, & McConnell, 821 Indiana Ave., Wichita Falls, Horton 10, BBB&C Ry sur, 300 ft N No. 9. Perkins & Cullum, Box 1020, Wichita Falls, Beaver-Electra 4, S 11, HT&B Ry sur, 450 ft to S and W lines. Magnolia Pet. Co., Dallas, S. Kelly 1, S 3, S.P. Ry sur, 150 ft to W in center of line; H. Reilly 128, L. C. Denison sur, 400 ft N No. 123. Tulsa Co., Bob Waggoner Bldg., Wichita Falls, E. A. Yarborough 26, S 29, E. Yarborough sur, NW corner. A. C. Walker, Harvey-Snider Bldg., Wichita Falls, S. H. McCarty 12, S. O. Fowler sur, 450 ft to N and 750 ft to E line. Clopton & Willis, City Nat. Bank Bldg., Wichita Falls, W. T. Willis 1, W. H. Anderson sur, 150 ft to S and E lines. Jno. O'Neil, Wichita Falls, G. L. Woodard 1, B 260, Waggoner Col. sur, 450 ft to N and 150 ft to W line. Ryan Pet. Corp., Bartlesville, Okla., G. Nance 51, S. O. Fowler sur, 400 ft SE No. 5. T. F. Hunter, Wichita Falls, J&J Waggoner 9, S 8, GH&H Ry sur, 400 ft SE No. 1. Evans & Woolens, 1206 Scott St., Wichita Falls, W. H. Chilson 1, B 7, D.C.S.L. sur, No. 4, 150 ft to S and W lines. Texhoma Oil & Ref. Co., Wichita Falls, J. H. Bentley 2, Col. Tap sur, 75 ft to E and 150 ft to S line. A. D. Robinson, Kirby Bldg., Dallas, J. E. Roller 26, W. A. Grady sur, 300 ft S No. 25. J. H. Gardner et al, 1636 Eleventh St., Wichita Falls, W. H. Chilson 3, B. 4, M. Ramsey sur, 237 ft S No. 1. Pierce & Brown, Walters, Okla., B. Rexford 2, C. T. Ry sur, center. Gulf Prod. Co., Fort Worth, G. Jennings 17, S 12, HT&B Ry sur, 326 ft E of No. 14; S. B. Burnett 35, S 1, T&NO Ry sur, 300 ft S No. 33. E. D. Ladd, Wichita Falls, D. E. Holt 1, J. M. Childress sur, 1144 ft to W and 486 ft to S line. G. H. Howell, City Nat. Bank Bldg., Wichita Falls, H. B. Hines 1, S 11, H&GN Ry sur, 150 ft to S and E lines.

**Wharton County**—Atlantic Oil Prod. Co., Magnolia Bldg., Dallas, A. E. Taylor 2, S. F. Austin sur, 200 ft NW No. 1 Humble Oil & Ref. Co., Houston, E. Hawes 1, S. F. Austin sur, 309 ft to N and 50 ft to E line. Sinclair Oil & Gas Co., Houston, A. E. Taylor 1, S. F. Austin sur, 50 ft to N and E lines.

**Webb County**—Snowden & McSweeney Co., Burkburnett Bldg., Ft. Worth, C. G. de la Garza 2, No. 682 sur, 2780 ft to E and 450 ft to S line. T. G. Binney, Box 738, Laredo, T. G. Burns 5, B 60, A. de Arriba sur, 569 ft to W and 528 ft to S line.

**Wilbarger County** — Landreth Production Corp., Vernon, W. T. Waggoner 3, S 42, H&TC Ry sur, 679 ft to N and 200 ft to E line; W. T. Waggoner 1, 200 ft to N and E lines. Humble Oil & Ref. Co., Cisco, W. H. Stephens 42, S 83, H&TC Ry sur, 360 ft S No. 4; 43, 300 ft S No. 36. Prairie Oil & Gas Co., Ranger, W. T. Wagoner 2, S 43 and 44, H&TC Ry sur, 220 ft to N and E lines.

**Young County**—Atkinson & Sandefer, Breckenridge, W. T. Donnell 1, S. 1111 TE&L sur, 250 ft to N and E lines; H. M. Ford 1, W. T. Carter sur, 250 ft to N and E lines. Plains Production Co., Staley Bldg., Wichita Falls, A. C. Casey 1, A. C. Casey sur, 150 ft to N and W lines. Multiple Oil Co., Box 744, Wichita Falls, G. B. Hamilton 1, B 1, I. Holman sur, 1200 ft to S and E lines. Humble Oil & Ref. Co., Cisco, W. R. Farmer 1, S 8, J. Anderson sur, 150 ft to N and W lines. Tidal Oil Co., W. T. Waggoner Bldg., Ft. Worth. R. Campbell 18, S 1483 TE&L sur, 425 ft E No. 11, Gulf Production Co., Ft. Worth, R. Campbell 2, 1452 TE&L sur, 150 ft to N and E lines. Consolidated Oil Co. of Texas, Wichita Falls, E. W. Lasater 1, 296 TE&L sur, 150 ft to N and E lines. E. S. Carey, City Nat. Bank Bldg., Wichita Falls, G. L. Gadberry 1, 227 TE&L sur, 150 ft to N and W lines.

## Lift-Truck Merger Results In Million Dollar Concern

Holyoke, Mass.—Among the interesting developments of the New Year is the recently announced merger of the Stuebing Truck Company of Cincinnati, Ohio, and the Cowan Truck Company of Holyoke, Massachusetts, manufacturers of well-known lift trucks and platforms under their respective names since 1912. The name of the new corporation is: The Stuebing-Cowan Company.

Cowan "Transveyors" were the pioneer commercial development of the lift truck system and these original trucks with later developments and combined with the Stuebing types, represent a complete line of equipment covered by many patents.

The total unit installations of both companies reaches 264,000 in every line of industry in America and throughout the world.

While the directing headquarters of The Stuebing-Cowan Company will be at Cincinnati, Ohio, the Cowan truck division will continue its operation at Holyoke, Massachusetts, uninterruptedly.

The merger represents a combination of assets and resources of approximately a million dollars. Both products are fully covered by patents and the policies of the Stuebing-Cowan Company will include that protection and service in the future that have so long been the Stuebing and Cowan standards in the past.

Sales offices will be maintained in all of the principal cities with stocks located at convenient points to provide prompt service for the steadily increasing demand for these products.

## New Continental Branch

Panhandle, Texas.—Continental Supply Company announces the opening of a branch store here, to take care of the oil supply business of this section. The Panhandle branch will carry a complete stock of Continental equipment.

---

**Joe Thompson**, former secretary to D. J. Moran, vice president of The Texas Company, Houston, has been transferred to Jacksonville, Fla., to enter the company's sales department there. He has been succeeded by B. D. Estes, who has been a co-worker of Thompson for some time.

West of the Mississippi— Stores Everywhere

East of the Mississippi— The Frick & Lindsay Co.

# Economy for Producers in Reid Powers

WE HAVE never heard of an oil company so extravagant as to employ one man to look after one pumper. One man or one crew looks after a number of wells—as many as can be successfully taken care of.

Why isn't that a good plan to employ as applied to pumping equipment? Why should there be a complete pumping unit for each well? One Reid Band Wheel Power can handle a number of wells much more economically than they can be pumped with separate units.

If you feel that your situation is different—and we are all inclined to think our problems different—we invite you to send us a rough diagram of the location of your wells, or submit such a diagram to the Frick-Reid Store in your field. With such a diagram, and data as to the depth of each well, the fluid handled, the size of the tubing, etc., we can give you concrete figures on which to base your consideration of a Band Wheel Power built by Reid. Reid Powers are a means of real economy to producing companies. Our engineering crew has countless precedents on which to base their estimate of your case. Please command us.

## Frick-Reid Supply Co.

*In Oil Country Equipment—the most HUMAN organization in America*

*Waukesha Motored P & H Trenching the Colorado River*

# Waukesha Helps on Houston Pipe Line

**E. A. MacPherson, contractors of Houston, used P & H trenchers in laying the new Refugio-Houston gas pipe line. For over ten years P & H have used Waukesha motors on their equipment. Waukesha Oil Field Power Units are a portable edition designed especially for oil field requirements, and have all the inherent heavy duty characteristics such as reliability, power and economy, which are equally necessary in a successful power shovel.**

*Write for the "Dynamic Thermostat," a booklet describing one of the latest developments made by the Waukesha Motor Company to provide better gasoline engine performance.*

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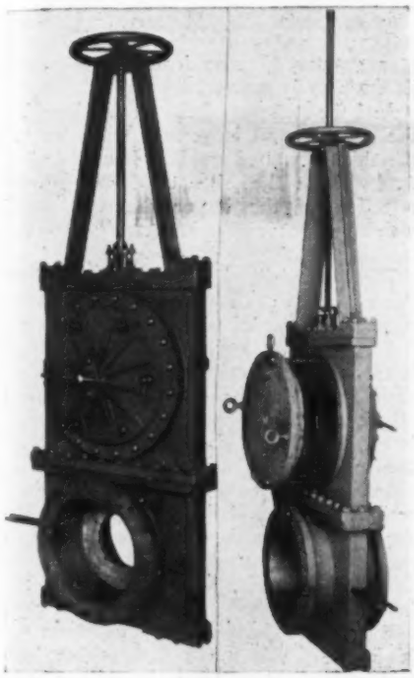
| *Aeolian Building* | *V. L. Phillips Co.* | *Wilson Machy. Co.* | *C. F. Camp Co.* | *Portable Rotary Rig Co.* | *Star Drilling Machine Co.* |

*Exclusive Builders of Heavy Duty Gasoline Engines for Nearly Twenty Years*

# NEW EQUIPMENT, CATALOGS, BULLETINS, BOOKS



New Orifice Valve being sold by the G. M. Davis Regulator Company

## Orifice Meter Has Features That Make for Time-Saving

Where orifice meters are used it is necessary at times to change the orifice disc. With a view of saving the cost of the by-pass and reducing the labor of making the change, the G. M. Davis Regulator Company, Chicago, Illinois, has designed and is now marketing the Davis Orifice Change Valve.

Accompanying illustrations are of two 20-inch valves of the new type recently delivered to the Comar Oil Company, Braman, Oklahoma.

The method of changing the orifice disc is by moving it from the valve body to the chamber above where it may be reached when the cover is removed.

The disc rests in a carrier plate that is attached to a screw spindle and the valve is operated the same as a gate valve. The flow is never interrupted. Leakage is prevented while a change is being made by means of a floating cover which clamps the carrier plate against a seat.

When the orifice disc is in its normal position in the valve body it is tightly clamped by screws against a seat on the up stream side to prevent leakage.

Inlet and outlet valve openings are machined to internal pipe diameter. Meter tappings are located according to standard requirements on each side of the carrier plate.

More information will be supplied by the company on request.

## "Hal" Gruber to Direct Mid-Continent Wire Rope Sales

Tulsa, Okla.—H. R. Gruber, better known in the oil country as "Hal," now is associated with the Black Steel and Wire Company, as vice-president in charge of sales and distribution in the Mid-Continent field. Prior to his connection with Black Steel and Wire, Mr. Gruber was manager of oil country sales for the Williamsport Wire Rope Company.

Offices of Black Steel and Wire Company are located at 538-539 Kennedy Building, Tulsa. For more than 20 years Mr. Gruber has been active in the oil industry and his experience in the sale of wire rope is extensive. He is well known in the trade, both in the Mid-Continent and Rocky Mountain fields and in the east as well.

General offices and factory of the Black Steel and Wire Company are located in Kansas City, with branches in the more important oil country distributing points.

"HAL" R. GRUBER

## Butler Manufacturing Co. Has Salesmen School

Kansas City.—Butler Manufacturing Company, well known oil field tank manufacturers, recently closed its thirteenth annual salesmen school. Salesmen from the various Butler branches were present.

The banquet that ended the school was a notable affair in Butler history. A varied program of songs, jokes, parodies, speeches, souvenirs and prizes was given. The affair was held at the Kansas City Club, and was attended by the salesmen and officers and managers of the Minneapolis office as well as those from Kansas City. Plant foremen from Kansas City were also present.

Music for the evening was given by the company's own orchestra. C. C. Crouch, vice-president and manager of the Minneapolis office led the playing, on a violin made by himself.

At the conclusion of the program, wives of those connected with the company and the women employees came over from the Orpheum Theater where they had enjoyed a line party, and participated in the raffling of the prizes.

Minneapolis delegation ready to board the train for Kansas City to attend the Butler Manufacturing Company Salesmanship school, recently closed

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**That Stuck Pipe With Edwards Reversing Tool**

Coupling for drill stem connection rotates to right
Hinged wings when turned to right open and anchor to casing—causing
The lower part to operate to the left, recovering stuck or twisted off pipe and casing

**Can be released at will. Will operate with strain on pipe. Has wide range of adjustment. Makes left-handed pipe unnecessary. Successful operations prove statements.**

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Patented—Patents Pending


# Theory and Practice of High Speed Rotary Drilling

*(Continued from page 43)*

The quality of material used in drill pipe and the heat treatment vary widely in the different kinds of pipe used, as for instance, low, medium and high carbon drill pipe, with cold drawn and hot drawn treatment, annealing, and so on, used in manufacturing this class of pipe; welded pipe, in which the material used is manufactured with reference to securing good welding qualities; wrought iron drill pipe, with its extreme ductility as compared with other material, but with its lesser strength.

The table does not apply to pipe that is not upset at the ends, for, where regular drill is used, the thread reduces the pipe section to that at the root of the thread.

And, if the allowable stress on the material of the pipe is greater than 4280 pounds per square inch, the figures above may be increased in a like amount, in the table.

The actual stress at which the best seamless drawn higher carbon pipe is deformed is much higher than the stress at which ordinary lapwelded drill pipe will begin to take on deformation. Actual torsion tests, applied to four-inch seamless drawn drill pipe with upset ends show that the pipe tested had a capacity of 10,640 pounds feet so that when used with an applied torque of 1418 pounds, as shown for one-quarter-inch wall four-inch pipe, a factor of safety of 7.5 is realized.

This test, and the table, may be taken as informal, for on great preparation was made for their compilation. They are as far as the writer has gone in this class of research, and are given as a lead to those interested in the hope that someone, manufacturer, or operator, will see the benefit to be derived from exact data of this kind with the idea of improvement of pipe to resist torsion better so that twist-off may be avoided. And also, the equipment used for turning the pipe, the rotary, and the engine, with the inertia of the rotary table and of the engine flywheel might be so arranged as to relieve the stress on drill pipe when drilling hard formations, boulders and the like.

### What Table Shows

Referring to the table No. 1, many interesting things can be derived from it. Where small drill pipe is used, as for instance, two and one-half-inch, with its capacity of 682 pounds feet of torque in the 10.45 pound pipe, a three-inch drill pipe weighting 8.45 pounds per foot may be substituted, securing greater capacity with lesser weight and cost of pipe.

And, comparing four-inch, 16.50-pound pipe with six-inch, 22.00-pound pipe, we can see that the addition of 33 1/3 per cent weight adds 85 per cent to the strength of the spring, using six-inch, 22-pound as compared with four-inch, 16.5-pound pipe. This, as may be noted, is due to the placement of the pipe steel at a greater distance from center where its capacity is greater.

And the stiffness of the larger pipe with the thinner wall is greater than that of the thicker walled smaller diameter pipe. And, where the size of hole permits, selection of the larger diameter, equal weight pipe adds materially to the strength of the pipe.

Five-inch drill pipe has not come into general use for a number of reasons, the most important of which is perhaps that the diameter of coupling will not permit it to be used in drilling through sizes of casing that four-inch can be used in. But, where eight and one-quarter-inch casing is set, this size of pipe used in drilling on the inside should be of material value.

This is not to say though that light weight pipe should be selected invariably, for some formations require weight to make the bit take hold and dig. Some formations require heavy weight, as for instance, hard shales, soft lime rock, slate and so on. The weight required on the bit ranges from a few pounds per inch width of fishtail to as much as 3000 pounds per inch of width and more, where the drill pipe is of large diameter and will permit of harder digging.

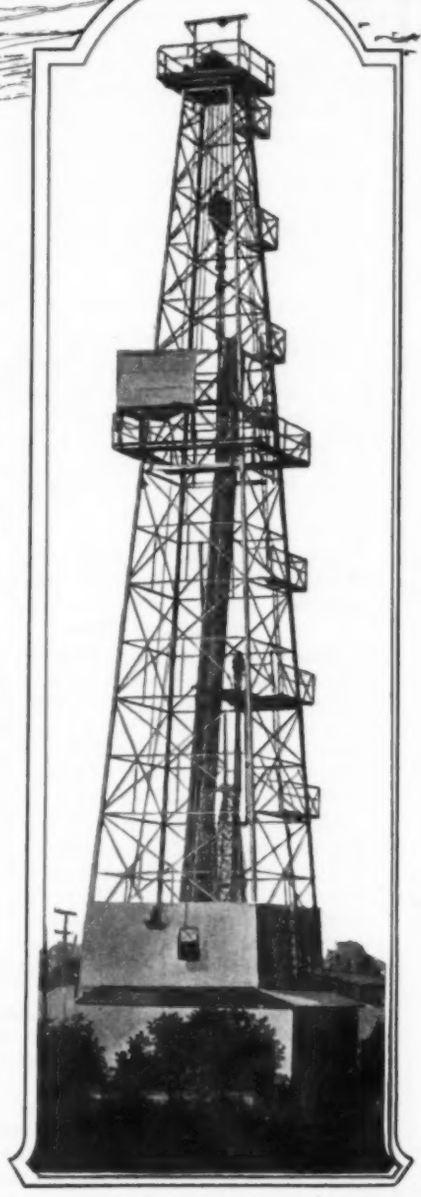
In one case, using four-inch drill pipe in an 11-inch hole, 16,000 pounds weight would not make much hole, but substituting heavier pipe, making the weight 2600 pounds per inch of width of bit, four to six times as much hole was made per bit and per hour. The mechanical properties of formations best drilled with fish tail bits vary so widely though that a compilation of drilling weights would necessarily require very extensive research and tabulation to suit those found in rotary territory.

In fishtail drilling, the sharpness of the edge of the bit is materially a factor as to torque requirement for, when the bit is sharp, the edge takes hold and digs but when the edge is dull, we know that when all the weight available is let down on the bit, it will turn without much power requirement, or at least, with far less power than required for the same bit when it was sharp.

A close estimate of the character of formation is necessary to distinguish between hardness and a dull bit, for a sharp bit makes the formation appear soft, while a dull bit makes the formation appear hard.

### Use of Disc Bits

The disc bit lends itself to greater cutting weight than the fish tail bit, due to the rolling action of the discs, and net results—cost of hole—in many formations, such as clay and gumbo, are in favor of disc bits. Heavy weight on a disc bit however tends to stop the discs from turning, with the discs wearing on one side only—"flat wheels"—and the writer therefore spins the disc bit a high



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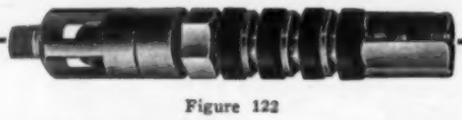

Figure 122

## To Prevent Unscrewing

Pulling and fishing jobs due to unscrewing constitute one of the evils that brings gray hairs to the head of the producer and pumper.

Hough Upper Steel Valves are designed specially to eliminate that evil. Two types shown herewith: Figure 122—Lower end of body drilled, slotted bottom secured by cotter pin. Has long thread on body above hexagon, with lock ring to hold crown secure. Figure 124: the body and bottom are one unit; cup rings and cups put on from top; fishing neck on crown with a hexagon lock nut to secure body, seat frame and crown—perforated bottom.

Give these Valves a trial—your dealer carries them in stock.

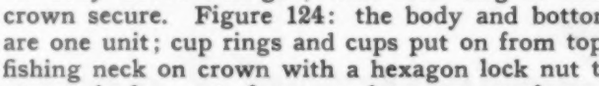

Figure 124.

## The Charles N. Hough Mfg. Co.

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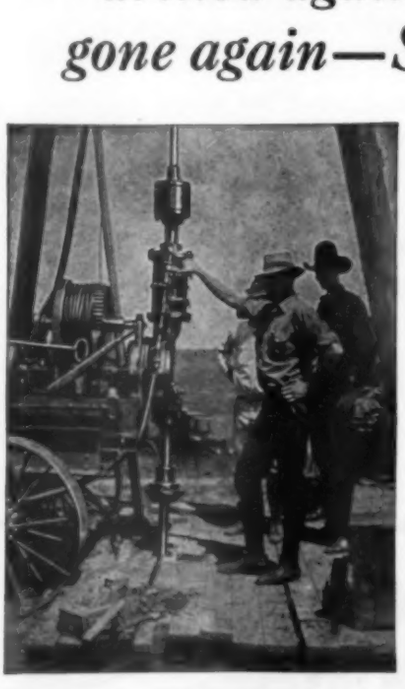
*Products that cut down your underground overhead*



## —"drilled again, core again gone again—SULLIVAN!"



That's the way an oil scout's report reads nowadays in Oklahoma or Texas when he's chasing structure testing crews of almost any of the big companies.

They're nearly all using SULLIVAN DIAMOND CORE DRILLS, because of the absolute accuracy and dependability of the core records, the speed with which the drilling is done, and the ease of moving from place to place.

The picture shows the business end of a mounted Fordson operated Sullivan Diamond Drill in Southern Oklahoma.

This type is popular because it is quickly moved, needs no boiler, while fuel and water are minimized. DID YOU SEE IT at the International Expo?

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speed with a light cut and believes that this method secures a maximum of hole in formations suitable for the disc bit.

Cuttings from the disc bit are of a different shape from the cuttings of fishtails. Fishtail bit cuttings are short and thick, while disc bit cuttings are long, thin slicings that flush out readily, whole.

Less torque is required to turn the disc bit with equal weight on it, compared to fishtail bits.

The weight required for cone roller bits has been the subject of investigation by the Hughes Tool Company and formed into a table for the use of drillers, and found in the Hughes Tool Company "Care and Operation of Hughes Tools." Referring to this, we find that the pressure required increases with the hardness of formation, similar to fish tail bit drilling in softer formations. The maximum pressure recommended per inch of hole diameter is about 1700 pounds weight and to secure the required pressures, the best heavy weight drill pipe is necessary, to produce the required torque, although the speeds of rotation are not specified as high as used by the writer in fishtail work.

The strength of drill pipe and the stiffness of drill pipe follow entirely different laws. Strength resists rupture, while stiffness resists flexure and torsion. Therefore, a long drill pipe, with its great length compared to its diameter, has less strength than a short section of the same pipe. If length and area of steel were reduced in the same proportion, a ten foot length would be about as large as a thread and totally unfit for any torsion purpose.

### Length of Pipe

Length of pipe bears directly upon torque capacity and, where there is shock, length and consequent flexibility due to length, absorbs much of it, though the pipe is weakened by length. Another factor bearing directly upon speed, and the capacity of the pipe to maintain such speed without rupture, is the diameter of hole in which the pipe is rotating, although, drill pipe of a definite size can be operated just as fast in a relatively large hole as in a small hole, provided the pipe is run correctly. The writer has definitely proved this in practice by operating four-inch pipe in a fifteen-inch hole at high speed without twist-off, but the same pipe promptly twisted off upon being operated in a buckled condition that set up critical speed and excessive vibration. Three-inch pipe in an 11-inch hole behaved in the same manner. In practice, however, larger sized drill pipe relatively is used and these experiments were made solely for ascertaining permissible speeds, and not for the purpose of making large hole with small pipe for that is not an economical method.

If the hole is 11 inches in diameter and six-inch drill pipe is used, with couplings 7⅝ inches in diameter, there is 3⅛ inches clearance and, with one side of the pipe coupling against the wall, the center of the pipe is not outside of the center of the hole, and the pipe cannot buckle excessively, even with its entire weight let down on bottom.

In 15-inch hole, the clearance is 7⅛

inches, permitting a buckle of an equal amount, and in this case, letting down all the weight can set up whipping quite readily and twistoff can occur just as easily in this hole as in a nine-inch hole with four-inch drill pipe.

In a nine-inch hole with four-inch drill pipe, there is a 3¾-inch clearance, and the pipe can whip and sweep the hole with an oscillation of 3¾ inches.

The writer believes that this phase of drilling is responsible for six-inch twisting off quite readily in large holes as four-inch in proportionately sized holes.

When pipe is suspended in the hole, with the bit up off of the bottom, the weight of pipe tends to straighten it, whether the hole is truly vertical or not. If the hole were perfectly true, the suspended pipe would be truly straight, of course. This condition has been previously illustrated in The OIL WEEKLY in a paper on high speed drilling. And, when pipe is let down to touch bottom with the bit, the pipe immediately begins to buckle at the bottom. The amount of weight let down controls the distance above bottom that the pipe buckles; if all the weight is let down, the pipe buckles from top to bottom, and if half the weight rests on bottom, then the lower half of the pipe buckles, while the top half, being suspended, does not buckle, although the whipping of the lower half is transmitted to the upper half.

### Elasticity of Pipe

When pipe is suspended in the hole, the lowermost joint exerts a pull downward; the next joint exerts a pull, and, this pull increases with each joint up the hole, being maximum at the top. This pull stretches the pipe, for all metals are elastic. A definite pull on a joint of pipe will lengthen it a definite amount, although the amount may be only a few ten-thousandths of an inch. This is termed the elasticity of steel, or the resistance it offers to deformation on the application of load, with the additional power to return to its original form after the load is removed. When the load applied is such as to permanently deform the steel, the limit of elasticity is reached. A standard set up for the measurement of this feature is termed the Modulus of Elasticity and this modulus is practically the same for any kind of steel. And, stopping here, the modulus of elasticity of steel may be taken at 30,000,000 pounds per square inch.

The amount of elasticity in a string of pipe may be calculated by the following means, that is, at any point in a string of pipe, for the stretch is proportionate to the weight applied, and the weight supported at any point is less than the weight at a point lower down, of course.

Taking the top joint of pipe in a string of four-inch pipe with one-fourth-inch wall, weighing 12.65 pounds per foot, and 3000 feet long. The weight on the top joint is 37,950 pounds, less the difference due to submergence. Assuming a weight of drilling slush at 1.1 times water, the

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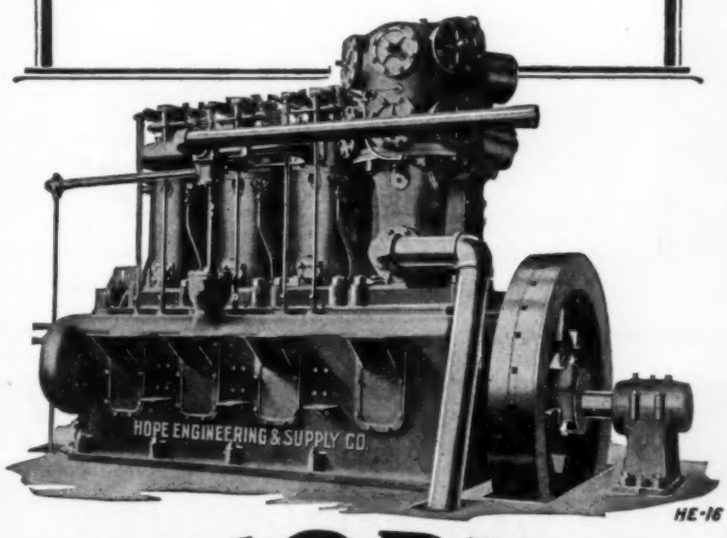


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net weight suspended is 33,773 pounds. The cross sectional area of steel in four-inch pipe with one-fourth-inch wall is 3.338 square inches. Now:

The increase per inch of length is given by the formula $S = \frac{L}{EA}$ where S is the increase in length per inch, L the load in pounds, E the modulus of elasticity, or 30,000,000, and A the cross sectional area. Then:

$$S = \frac{33{,}773}{30{,}000{,}000 \times 3.338} = .000337$$

inch per inch.

And, for any inch of the string, the lengthening due to elasticity may be obtained in the same manner, from which it follows that, as the weight decreases going down the string, the calculation would include the lesser weight, and there is consequently, no short general rule that can be used for determining the lengthening of a string of drill pipe in the hole. We can see though that a long string of pipe lengthens more than a short string, consequently, after the bit touches bottom, more pipe can be fed into a deep hole than a shallow hole, per foot of depth.

If the drill pipe were laid out flat on the ground and a pull of 33,773 pounds placed on it, the lengthening could be computed very simply, and would apply to any inch of length in the string.

### Buckling

As an observation, we can see that the best pipe should be placed at the top of the string when this point is considered, but there are other considerations that bear on this, such as buckling.

When pipe is let down to touch bottom with the bit, the pipe immediately at the bottom returns to its original length, and then buckles in the hole, laying against the wall—this being termed buckling by the writer. If sufficient weight is let down to equal the weight of 100 feet of pipe, then that weight is resting on bottom, with the remainder of the pipe above still in tension and lengthened, although, lessening the weight on the upper pipe reduces its lengthening, too. And we now see that elasticity of pipe is a valuable factor to the driller in proportioning the weight let down on the bit, for, when the weight of 1000 feet, say, is required, just that much may be let down on bottom, with the pipe above still in tension, and straight.

The writer has measured the stretch of 35 carbon seamless drawn drill pipe and found it to be three-eighths inch per hundred feet at one thousand feet, using four-inch in a 9⅞-inch diameter hole.

In a smaller hole with this same drill pipe, the stretch is less, and in a larger hole, more, due to the lessening of length by greater buckling in the larger hole. It is quite impossible to measure the stretch of drill pipe due to elasticity of the steel of which it is made, and the stretch due to buckling in the hole, for the two effects are simultaneously observed.

But, the amount of weight let down

on bottom may be ascertained by stretch, roughly. Letting the pipe down slowly while turning until the bit touches bottom, then measuring the additional pipe that will go into the hole, and using this additional length that will go into the hole as a gauge.

With a hole, say 1500 feet deep, assume that the kelly must be raised six inches to clear the bit, or that, after the bit touches bottom, six inches more of pipe may be let down into the hole. When the full six inches is let down, all of the weight of pipe is on bottom and, also, when three inches only is let down, then only one-half of the pipe is resting on bottom, with the upper half suspended from the travelling block. And when two inches only is let down, one-third of the weight and length of pipe, or 500 feet, is resting on the bit.

This method is quite valuable in coring, since a gauge of weight on bottom is necessary.

### Weight Required

The weight required for fishtail digging is proportional to length of cutting edge, or to the diameter of hole; a large hole requires more weight than a small hole. Torque required also increases with hole diameter, for the points of the bit are further from center in a large hole than small.

And, with greater weight and greater torque requirement, we can readily see the difficulties in big hole work, for the greater weight let down buckles the pipe more and decreases its torque capacity, when hard digging is encountered.

Much of this difficulty can be overcome by adding heavy sections of pipe to the bottom immediately above the bit, making this section equal to the maximum weight required to sink the bit in the formations requiring the most weight. If, say 8000 pounds is required on top of the bit using four-inch in a nine-inch hole, and we add 100 feet of thick walled seamless pipe weighing 80 pounds to the foot to the string, immediately above the bit, it follows that all of the drill pipe above the heavy section will be in tension, and consequently is straightened out, when it will revolve truly at high speed without whipping.

And, using six-inch drill pipe in 11-inch hole, with a weight requirement of 15,000 pounds, to suit formation, hole and pipe, a section of this weight would be placed above the bit, so as to straighten out the six-inch when the pipe develops its full torsional strength and will make more hole.

These weights set out have been the maximum that the writer has found necessary for any class of hard formation; with softer formations, as soft shale, weight requirement is not as much for the bit sinks quite readily with weight and rotation, and the drilling pump cannot flush out all that can be dug up.

When the weight of pipe is let down, pipe buckles quite readily since the proportion of length to diameter is very great, especially when the hole is deep.


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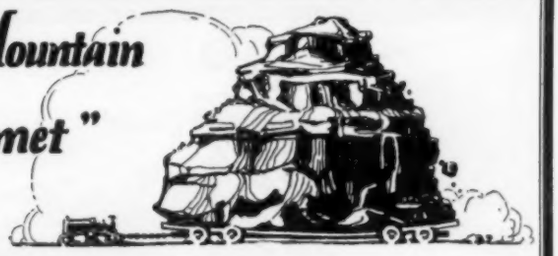

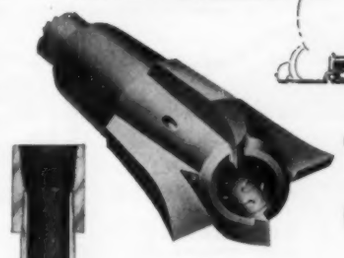

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*It is so constructed that the method of circulation prevents the wash from breaking up the core and an unusually large core can be taken either in hard or soft formations without burning or damaging.*

*The one piece, forged steel, tapered core bit has large and positive circulation holes which prevent the core drill from sticking in the formation penetrated.*

*Four teeth form the cutting surface of the Foster Core Drill, which is different from any other on the market.*

*Will cut away any formation that can be cut with a fish tail bit.*

*While cutting the core, the Foster continues to make hole and can be made to keep the hole to gauge.*

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### Speed and Power

Now, we have seen that a shaft will transmit power in direct proportion to revolutions; that torque capacity is constant, for a given shaft, for any speed; and therefore, drilling being a matter of transmitting maximum power down to the bit, high speed rotation applies more horse power to the bit.

In any case, the feed of the bit down, per revolution is fine; making 20 feet of hole per hour at 100 revolutions per minute, means a feed per revolution of 1/25 inch; at the same rate of feed per revolution, a speed of 200 revolutions per minute results in 40 feet of hole per hour, provided of course, that it is fish tail digging, and that the pump has sufficient volume of pressure to carry the cuttings away and keep the hole clean. These rates of making hole have been exceeded materially, with every part of the equipment of the most improved type and with heavy six-inch drill pipe. Some of the wells drilled at Powell showed rates of 70 feet of hole per hour, average, including the Austin chalk.

There are many formations, though, that cannot be drilled as readily as this, and in which speed is the most important factor. Hard shale, of the consistency of slate, soft lime rock, sandstones, hard gritty shales, will not allow the bit to sink and take hold readily and in these, with maximum permissible weight, speed is the only remaining source of more hole.

When drill pipe is flexed, it can do three things that tend toward parting the pipe. First, it can sweep in an arc around the wall of the hole, and when so doing, only one side of the pipe touches the wall if the pipe sweeps around the hole once for each revolution of the pipe. The side of pipe in contact is rubbed bright. Flexures of this kind occur at irregular intervals, closer together in large holes than in small, with the same size drill pipe, and still closer together with increasing weight let down on the bit. Naturally, when weight is on the bit, the greatest weight in compression on the pipe is on the lower joints.

Second, when flexed by weight and rotated at high speed, the drill pipe will lay against the side of the hole at intervals without sweeping around the wall in a loop, and rotate in this position without vibration. Pipe is thus stressed all around its circumference during each revolution, leading to deformation and fatigue or crystallization.

Third, when flexed, the pipe can sweep part way around the wall, and, tending to straighten out, can whip directly across the hole and strike the opposite side of the hole quite violently, caused generally

by a bent joint, or a tool joint or pipe coupling being threaded out of line, although the assumption is made in this paper that all drill pipe should be and is truly straight in the body of the pipe and in every joint, which means that every thread must be tapped on the same center line.

### Detecting Vibration

Vibrations of these various kinds can be observed by stopping the rotary suddenly, when the pipe will continue to vibrate down in the hole. Invariably, pipe vibrates more in this manner, when operated at slow speed than at high speed.

The stiffness of pipe has much to do with its good service. Higher carbon drill pipe forms a stiffer and more rigid shaft than low carbon pipe and flexes less under any condition of service. The writer has observed before in The OIL WEEKLY that higher carbon pipe is less subject to fatigue or crystallization than low carbon pipe, and a part of this may be due to greater stiffness of the higher carbon material, tending to prevent flexure.

Flexure of pipe while rotating tends to concentrate fibre stress of the pipe wall, at the joints, for the body of the pipe can bend in greater arc or sweep than the joint. Failure of pipe due to torsional stress is augmented by high local stresses, repeatedly applied while rotating. Compression stress is never sufficient to cause deformation but tensile stresses set up in this manner set up fatigue locally.

Where there is a joint below and a joint above a tool joint, flexed, and due to the stiffness of the joint and the upset portion of the pipe, the stress from flexure is greatest immediately above and below the joint. One side of the pipe is in compression, doing no harm, but the other side is in tension and may therefore be stressed beyond the elastic limit when it fails.

We can now see differences in the causes of twist-off; a twist-off, caused solely by torsion, is just as apt to occur at the top of the hole as at the bottom, while a twist-off caused by flexure naturally occurs in the lower sections of the hole where flexure is greatest, due to weight of pipe above.

Of course, tests of these principles are apt to be quite expensive in fishing jobs, but if high speed running is done with some degree of care at the inception, there is no necessity for twisting off. No twist-off has been recorded against high speed rotation in the writer's experience, although an attempt to secure high speed by one driller resulted in a twist-off; he never did get the pipe up to speed because, being accustomed to letting down all the weight that could be turned, and having a great excess of power required for drilling, he simply opened the throttle and in thirty seconds was twisted off, with the rotary running at 90 turns a minute. This driller, today, though, runs at all speeds safely and no twist-off has since been charged against him.

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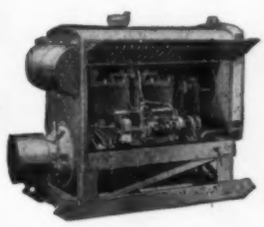

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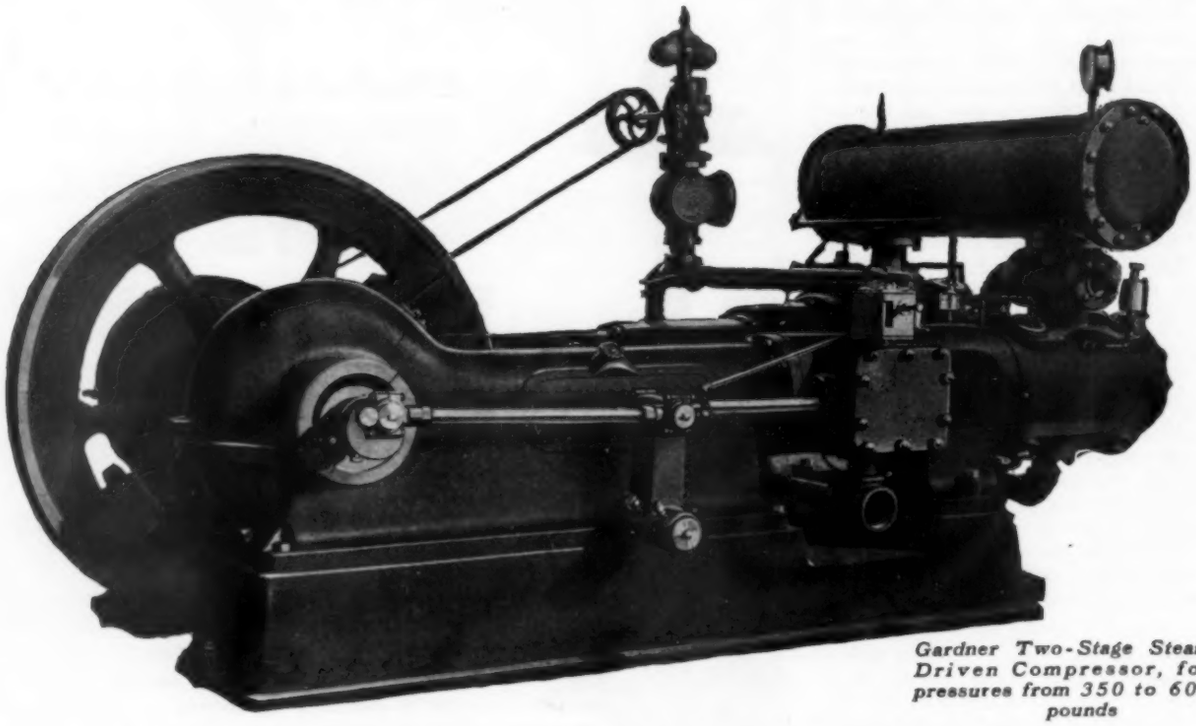

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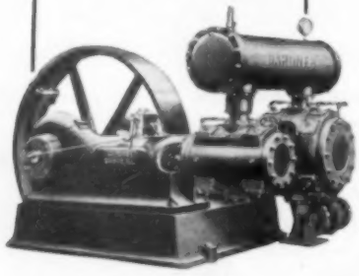

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# GARDNER

*Say you saw it in The OIL WEEKLY*

# LETTERS OF Paul Peebles P.S.G.

*By R. L. Dudley*

mi deer cleo:

well, cleo, i hav gone and did it! i am out 2 the amer. petrolum instertoot whitch i organized in wash. severl yrs ago and whitch i got started on standardizin back at st louis.

i hav jist about got things fixt up or i thort i had and if these boys will jist let me alone and vote with me on evry propersishun i will git things arranged so that i and amon carter and walter can set the throttil and the spark and jist go 2 sleap and let 'er ride.

howsomevr, i hav run onto sum trubbl in standardizin on tool joints and on derricks and on pipe and on boilers and on a few other insidentls, on act. of general cussedness of the holy poly, whitch it is frentch for the rabbl whitch is yiddish for the rest of the fellrs whitch belong to the amer pet inst.

on derrick standardizin we only gotten six in. frum the derrick floar the first day and at the rate we are progresin we ort 2 git to the crown block by the time Cal coolidge's conservashun committee holds its finl meetin. we past one reserlushun 3 times by unanimus vote and awl wuz goin smoth when sum derned fellr ast what was the reserlushun we had jist voted on and we spint the rest of the day tryin 2 agree on what it wuz.

on the tool jts we done bettr as we agreed that awl of them ort 2 have a hole down the middle of 'em to let the bs etc. etc. go threw. sum of the fellrs wuz fer standardizin on 1 thred and sum wuz fer another and bert childs of the reed rollr bit co wuz fer standardizn on two whitch slim crawford of sreesport said wuz nothin but straddlin the derned fents. slim, he said he himself personal, wuz not parshul for anykind as they was awl good tool joint threds. a fellr named hill from californy spoak at length on the subject of wy he wuz in favr of one kind and then said as he was not shure, he wood like 2 see the fellrs experimence some more befoar decidin definite on what kind they wuz agreed on not likin. it looks to me hunny, that a good plan whitch it would please evrybody, wood be 2 standardize on one tool jt 2 go on the 1st 2 joints of pipe and another standard fer the next 2 lengths and so on which will git awl of the boys 2gether.

sum of us boys air preparin to start a new comity on standardizin, to-wit:

a comity on standard lies 2 tell our wives and sweetharts.

the suggestin was offered by a fren of mine which doesnot want his name used, 2 make it 2 comitys on act of the looks of things, whitch wood make it

1—a comity on standardizin lies 2 wives.

2—a comity on standizin on lies to sweetharts.

ferinstants, we wood awl say that we never by our wives no close costin more than 10$ per each. we wood awl say that our wives wears there hats 2 yrs eatch.

of coarse, cleo, my darlin, i wood not be a membr of that comity and we aint got no specificashuns on lies 2 sweetharts so i cannot tell you what they wood be.

cleo, you have hearn a lot about californy and i tole you most awl their was about it when i wuz out hear two yrs ago. the onliest diffrentz now is that half of the 250 thousand reel estate fellrs whitch was hear then has gone to florida and as them 250 thousand reel estate felirs done a lot of tradin amongst and between theirselfs, naturly bizness aint so good out hear in corner lots.

you wuz certnly good 2 let me have the muny 2 come out on and i will pay you back as soon as possibl. i wood of paid you back awlreddy only ralf musser of the gatx wood not shoot no craps with me. ralf aint forgot the time when i made expents muny for 2 mo. outin him, 2wit, 40$, up in dallis.

i and edgar run the speshul trane out of Texas and awl of the boys seamed pleased with the way we done it. it shore made them happy, they was singin most of the way. it certnly makes sum of them happy to leev hoam. we wint over to Warez, whitch is the mexican part of el paso and carl young and sum of the fellrs boughten out a cafy there. to sea them boys rushin in plases whitch had "bar" markt on the doars, wood of made you think that they wuz bartenders an wuz late to work.

after we gotten on the trane at el paso friday nite and gotten started it was a reglar grand opry. i never new that john tucker of the nashnul supply co wuz sitch a good singr. he wood keep time with his thumb and awltho he said his stile wuz crampt, i shore wood like to of sean him wen he has plenty of room! A fellr named rosser from ft worth was singin about a girl six ft tall, whitch had her seet in the kitchen and her ft in the hawl and whitch wuz his best girl. the way he wuz singin you wood of thort that that pore girl wood of wore her seet out settin in the kitchen. Another gy insisted on singin "she wooden buleaf me" and the way he carried on i wuz not surprized that she wooden buleaf him. wen i git back i am goin to ast john tucker to come to goose creek and give his rendishun of the "fase on the barrom floor". it brang teers to mi eyes. a big rufneck by the name of johnson must not of ever ben anyware be4 because i do beleaf that he had never had no good close on b4. he woar his bvds outside his pants, and cleo, i think a fellr had of just as well not ware no drawers as to ware 'em on the outside, dont you?

nat guiberson wuz their with a pare of short pants on, but that didnot stop nat. he told me awl about everythin and how it wuz done but he played a dirty trick on stuart giraud of houston, tho neather him nor stuart noed about it til sumone told 'em. you sea stuart he was to Warez with nat and the trip sertnly did make both of them happy. stuart ordered sum egs and spinitch fer supper on the trane and nat which was settin up at the other end of the car ordered ham and egs. well, they started goin up and down the car matchin dollars and wen nat he got down to stuarts tabul, he just settn himself down and et up stuarts egs and spinitch, thinkin they was his ham and egs. stuart ordered 3 meels and somebody elst et 'em all up for him


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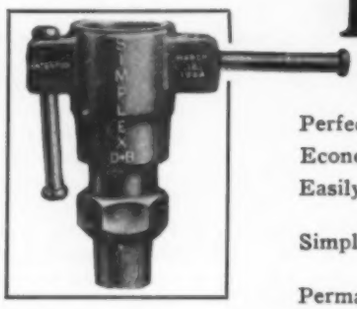

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and the last i seen of him on the trane he was in the kitchen argifyin with the cook about gittin sume isecreem served on a pertater sandwitch.

edgar Marston was along. his favrite numbrs on the trip was 7 and 11.

awl of the boys had a good time and i wood tell you about awl of them and there doins only sum of them had herd about yu sendin yore lettrs up to the oil weakly and gittin them printed, so they spoke to me in private. i certnly had a good finanshul trip. judge germany i think ment to sea me but he didnot compleate the deal. judge germany shore had a good time but i understand that they is a fellr on the oil weakly down 2 houston whitch says that he donot keer if he is marryed only 2 months, no hi-bindin oil man has not no rite 2 try and corral awl of his wifs time and i expect 2 heer more of this anon, as the bibl says.

i will try and rite you sum more as soon as i git things straitened up out hear. i am figrin on goin into the geeology consultin bizness with tom o'donnell whitch i got elected pres of the Amer pet inst sum time back. i will let you no.

yores,
Paul.

## Adams Royalty Co. Buys Peerless Oil & Gas Properties

Tulsa, Oklahoma.—One of the largest royalty deals to be made in the Mid-Continent in several years was disclosed when it became known that Robert R. Hixon and associates had acquired by purchase all of the proven, semi-proven and wildcat royalties of the Peerless Oil & Gas Company.

Immediately following the purchase the Adams Royalty Company was formed to hold the newly acquired properties and others which will no doubt be secured from time to time. It is believed that the Adams Royalty Company will become quite active in the royalty of the oil industry in the Mid-Continent districts.

It is announced that the Peerless Oil & Gas Company will continue under its present name and remain in the oil royalty business. The operating office is in Tulsa and Vernon T. Taylor, Indiana, Pennsylvania, is president and principal stockholder.

It has been known for some time that Hixon and his associates were checking over the properties of royalty companies in the Mid-Continent. After the appraisal of the Peerless holdings an offer of $3,000,000 was made and accepted.

The sale involved the royalty on about 60,000 acres of land, of which about 22,500 acres are in active areas of Oklahoma, Kansas, Texas and Louisiana, divided as follows: 3500 acres in north and southwest Texas; 18,000 acres in Oklahoma, 600 acres in southern Kansas and 200 acres in Louisiana.

# SQUEAKS FROM THE BULL WHEEL

Sister's beau was taking supper with the family and Johnny was enthusiastically telling him about a soldier friend who had called on his sister several days since. He said, "Gee! he was swell, and he had his arm—"

"Johnny," said his sister in great embarrassment, and blushing to the roots of her hair, "what are you telling?"

"Well," said Johnny, "I was only going to say that he had his arm—"

"Johnny, that will be enough from you," said his mother.

"I was only saying he had his arm—"

"Johnny, you leave the room this minute," said his father severely.

Johnny began to cry, but as he left the room he sobbed, "Well, I was only going to say that he had his army clothes on."

---

George, are you teaching that parrot to swear?

No, mother, I'm only telling him what not to say.

---

"What rule may the novice follow to avoid hitting his thumb while driving a nail?"

"Hold the hammer with both hands."

---

"Say, Esther, do you know how they summon the deaf mutes to dinner at the asylum?"

"No, how?"

"They ring dumb-bells, of course."

---

Gentleman (to lady sitting on his hat): "Excuse me, Miss, but do you know what you're sitting on?"

"Well, I ought to—I've been sitting on it for twenty years!"

---

"Yes, my friends," said the theological lecturer, "some admire Moses, who instituted the old law; some Paul, who spread the new. But after all, which character in the Bible had the largest following?" As he paused, a voice from the back seat shouted, "Annanias!"

Cunnard or some White Star
And a first-class for me,
And may there be no closing of the bar
When I put out to sea.
—Judge.

I'll count as loss the time I am asleep,
Too full for blowing off foam.
When I can have those glasses cool and deep
Why want to stay at home?

---

Phoner: "Hello, Central! I want Blank 5497—and say, get it quick, like they do in the movies."

---

Scotch Parson: "Little boy, ha ye no better way o' spendin' your evenin' than swingin' on the front gate, idlin your time when you could be doin' something useful?"

Little Boy: "I'm no idlin' away ma time. There's an Englishman inside the house kissin' ma sister, and he's payin' me saxpence an hour to watch oot for ma father."

---

"Some friend give you that cigar?"

"I don't know yet."

A deaf man was being married and the parson asked the usual question, "Do you take this woman for your lawful wife?"

"Eh?" said the deaf man.

"Do you take this woman for your lawful wife?" this time a bit louder. The groom seemed to get angry. "Oh, I don't know," he said. "She ain't so awful. I've seen worse than her that didn't have as much money."

---

The supervisor of a school was trying to prove that children are lacking in observation.

To the children he said, "Now, children, tell me a number on the board."

Some child said, "Thirty-six." The supervisor wrote sixty-three.

He asked for another number and seventy-six was given. He wrote sixty-seven.

When a third number was asked a chid who apparently had paid no attention called out "Theventy-seven. Change that, you old thucker."

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Reference: Mercantile Agencies

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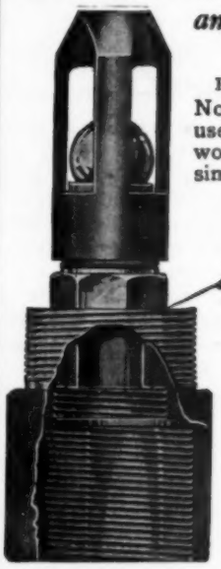
Patent No. 1353303



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**Wilson & Willard**
MANUFACTURING COMPANY
Factory and Distributor's Office It's a Wilson 2301 East Vernon Ave. Los Angeles, Calif.

# GUIDE FOR PURCHASERS

*A classified directory of all products used in the production of oil together with names of recognized supply dealers and manufacturers from whom they may be purchased. The concerns appearing in the Guide are regular advertisers in The OIL WEEKLY and further information including addresses can be secured by referring to their advertisements. Alphabetical Advertisers Index on page 22.*

**Air Compressors—**
Continental Supply Company
Gardner Governor Co.
Hope Engineering & Supply Co.
Southern Engine & Pump Co.
Waukesha Motor Co.

**Air Lift Pumping Equipment—**
Gardner Governor Co.
Sullivan Machinery Co.

**Asbestos and Magnesia—**
Johns-Manville, Inc.

**Attorneys—**
Hirsch & Hannay
Vinson, Elkins & Wood

**Babbitts—**
Eagle Picher Lead Company

**Balls and Seats—**
Continental Supply Company
Norris Brothers
Northrup Equipment Company
The Charles N. Hough Mfg. Co.

**Band Wheels—**
Continental Supply Company
Emsco Steel Products Co.
International Derrick & Equipment Co.
Lee C. Moreo & Co., Inc.
Parkersburg Rig & Reel Co.

**Bell Nipples—**
The Cunningham Co.

**Belting—**
Bridgeport Machine Co.
Continental Supply Company
Frick-Reid Supply Co.
International Supply Co.
Oil Well Supply Co.
Republic Supply Co.

**Belt Clamps—**
Federal Supply Company

**Bit Steel—**
Andrews Steel Co.
Central Steel Co.
Ludlum Steel Co.

**Black Diamonds—**
R. S. Patrick

**Boilers—**
Bridgeport Machine Co.
The Brownell Co.
Continental Supply Company
Coatesville Boiler Works
Frick-Reid Supply Co.
International Supply Co.
The Longhart Supply Company
The National Supply Cos.
Oil Well Supply Co.
Republic Supply Co.
Regan Forge & Engineering Co.
Star Drilling Machine Co.
Titusville Iron Works Co.
United Iron Works, Inc.
See Oil Field Supplies and Tanks

**Boiler Mountings—**
The Lunkenheimer Co.

**Boiler Tubes—**
The Tyler Tube & Pipe Co.

**Blowout Preventer—**
Baash-Ross Tool Co.
Cameron Iron Works
Continental Supply Company
Regan Forge & Engineering Co.

**Burners—**
Continental Supply Company
Gaso Pump & Burner Mfg. Co.
Regan Forge & Engineering Co.
Okmulgee Boiler & Welding Wks.

**Bull Wheels—**
Continental Supply Company
International Derrick & Equipment Co.
Lee C. Moore & Co., Inc.
Parkersburg Rig & Reel Co.

**Calf Wheels—**
Continental Supply Company
International Derrick & Equipment Co.
Lee C Moore & Co., Inc.
Parkersburg Rig & Reel Co.

**Carbon and Bortz—**
R. S. Patrick

**Casing—**
Continental Supply Company
National Tube Co.
Regan Forge & Engineering Co.
Republic Supply Co.
South Chester Tube Company
Superior Tube Co.

**Casing Shoes—**
Baker Casing Shoe Co.
Bridgeport Machine Co.
Continental Supply Company
The National Supply Cos.
Pelican Well Tool & Supply Co.
Regan Forge & Engineering Co.
Republic Supply Co.

**Cement Hardener—**
The Sullivan Co.

**Chain Blocks—**
Yale & Towne Mfg. Co.

**Charcoal Iron Boiler Tubes—**
The Tyler Tube & Pipe Co.

**Chemicals—**
Ward Chemical Co.

**Collapsible Rotary Bits—**
O. M. Carter

**Control Heads—**
Continental Supply Company
Southern Brass Mfg. & Plating Company

**Conservation—**
Westcott & Greis

**Core Drills—**
Allen & Courtney Oil Tool Co.
O. M. Carter
Elliott Core Drilling Co.
H. C. Smith Mfg. Co.
Spengler Core Drilling Co.

**Compressors—**
Butler Mfg. Co.
Continental Supply Company
Gardner Governor Co.
Hope Engineering & Supply Co.
Sullivan Machinery Co.
United Iron Works, Inc.

**Cordage—**
Continental Supply Company
The Longhart Supply Company
The National Supply Cos.
Republic Supply Co.

**Crown Blocks—**
Baash-Ross Tool Co.
Continental Supply Company
International Derrick & Equipment Co.
Lufkin Foundry & Machine Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.

**Couplings—**
Continental Supply Company
Harrisburg Pipe & Pipe Bending Co.
Superior Tube Company

**Cocks, Drain—**
The Lunkenheimer Company

**Dehydrating Processes—**
Wm. S. Barnickel Co.
Petroleum Rectifying Co.

**Derricks and Rigs—**
International Derrick & Equipment Co.
Lee C. Moore & Co., Inc.
National Turnbuckle Derrick Co.
Parkersburg Rig & Reel Co.
Peden Iron & Steel Co.
Robertson-McDonald Lumber Co.
Superior Tube Company

**Diamond, Black—**
R. S. Patrick
Sullivan Machinery Co.

**Diamond Core Drills—**
R. S. Patrick
Sullivan Machinery Co.

**Diamond Drilling Carbon—**
R. S. Patrick

**Disc Bits—**
Continental Supply Company

**Diesel Engines—**
Busch-Sulzer Bros. Diesel Engine Co.
McIntosh & Seymour Corp.

**Ditchers—**
Buckeye Traction Ditcher Co.

**Draw Works—**
Continental Supply Company
Lufkin Foundry & Machine Co.

**Drilling Cables—**
American Cable Co.
Bridgeport Machine Co.
Continental Supply Company
Frick-Reid Supply Co.
The National Supply Cos.
Peden Iron & Steel Co.
Regan Forge & Engineering Co.
Republic Supply Co.
Star Drilling Machine Co.
Wickwire Spencer Steel Corp.

**Drill Pipe Slips—**
Baash-Ross Tool Co.
Continental Supply Company

**Drilling Machines—**
Bridgeport Machine Co.
Continental Supply Company
Parkersburg Rig & Reel Co.
Star Drilling Machine Co.

**Drill Collars—**
Baash-Ross Tool Co.
Continental Supply Company
Federal Supply Co.

**Drill Pipe Cutting—**
Baash-Ross Tool Co.
Houston Engineers, Inc.

**Drilling Tools—**
Acme Fishing Tool Co.
Baash-Ross Tool Co.
Continental Supply Company

**Drilling, Diamonds for—**
R. S. Patrick

**Drill Pipe—**
Continental Supply Company
Frick-Reid Supply Co.
National Tube Co.
Republic Supply Co.
Reading Iron Co.
South Chester Tube Company

**Drilling Equipment—**
Baash-Ross Tool Co.
Bridgeport Machine Co.
Continental Supply Company
Hercules Supply Co.
Republic Supply Co.
Star Drilling Machine Co.
Superior Tube Co.

**Drive Pipe—**
Continental Supply Company
Republic Supply Co.
Reading Iron Co.
Superior Tube Company

**Electrical Equipment—**
General Electric Co.
Westinghouse Elec. & Mfg. Co.

**Elevators—**
Bridgeport Machine Co.
Continental Supply Company
The Cunningham Co.
Dunn Mfg. Co.
LeBus Rotary Tool Works
Wilson & Willard Mfg. Co.

**Electric Equipment—**
General Electric Co.

**Engines, Diesel—**
Western Machinery Co.

**Engines, Gas—**
Bruce-Macbeth Engine Co.
Climax Engineering Co.
Continental Supply Company
Frick-Reid Supply Co.
Hope Engineering & Supply Co.
Spence Machine Co.
The Pattin Bros. Co.
Waukesha Motor Company
Western Machinery Co.

**Engines, (Gasoline or Kerosene)—**
Climax Engineering Co.
Waukesha Motor Co.

**Engines, Oil—**
Continental Supply Company
Frick-Reid Supply Co.
The Pattin Bros. Co.
Western Machinery Co.

**Engines, Pumping—**
Ajax Iron Works
Bessemer Gas Engine Co.
Bridgeport Machine Co.
Climax Engineering Co.
Continental Supply Company
The Brownell Co.
De La Vergne Machine Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hope Engineering Co.
Lucey Mfg. Corp.
Lufkin Foundry & Machine Co.
The National Supply Cos.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Peden Iron & Steel Co.
Republic Supply Co.
Rock Island Plow Co.
Spence Machine Co.
Southern Engine & Pump Co.
Titusville Iron Works
Waukesha Motor Company
Western Machinery Co.

**Engineers—**
Hope Engineering & Supply Co.
Lee C. Moore & Co.
D. T. Ring

**Fire Protection—**
Continental Supply Company
Oil Conservation Engineering Co.

**Fish Tail Bits—**
Continental Supply Company
Frick-Reid Supply Co.
Federal Supply Co.
Lucey Mfg. Corp.
Pelican Well Tool & Supply Co.
Regan Forge & Engineering Co.

**Fishing and Drilling Tools—**
Federal Supply Co.

**Floor Circle Braces—**
Continental Supply Co.
Dunn Mfg. Co.

**Fuel Oil—**
Gulf Refining Co.
Sinclair Refining Co.

**Gasoline Extraction Compressors—**
Continental Supply Co.
Bessemer Gas Engine Co.
Hope Engineering & Supply Co.
Sullivan Machinery Co.

**Gauge Cocks—**
The Lunkenheimer Company

**Gauge Hatches—**
General Machine Works
Oil Conservation Engineering Co.
Westcott & Greis

**Gauges—**
Continental Supply Co.
Oil Conservation Engineering Co.
Westcott & Greis

**Gas Engines—**
C. F. Camp Co.
S. M. Jones Co.
Joseph Reid Gas Engine Co.
Waukesha Motor Co.

**Gas Generators—**
Baird Supply Co.

**Gas Lift System—**
Jones-McLaughlin Co.

**Gas Traps—**
American Tank Co.
Continental Supply Company
Lorraine Corp.
Smith Separator Co.
Trumble Gas Trap Co.

**Gasoline and Oil Storage Tanks—**
American Tank Co.
Butler Mfg. Co.
Continental Supply Company
Kansas City Struct. Steel Co.
Pelican Iron Works Co., The

**Genuine Wrought Iron Casing—**
Reading Iron Co.

**Geologists—**
Edwin R. Hopkins
Armstrong, Price W.

**Governors—**
Gardner Governor Co.

**Grips and Clamps—**
Continental Supply Company
J. P. Ratigan
Sargent Engineering Corp.

**Heat Exchangers—**
Brown Welding & Machine Co.
Hope Engineering & Supply Co.

**Hoists—**
Emsco Steel Products Co.

**Hose—**
Continental Supply Company

**Houses—**
Crain Ready-Cut House Co.

**Iron Casing—**
Superior Tube Company
South Chester Tube Company

**Jars—**
Spang & Co.

**Joint Collars—**
Federal Supply Co.

**Laboratory Equipment—**
Continental Supply Company
Fort Worth Laboratories

**Lapwelded Steel Boiler Tubes—**
The Tyler Tube & Pipe Co.

**Lead in Oil—**
Eagle Picher Lead Co.

**Lead Wool and Containers—**
Eagle Picher Lead Co.

**Lighting Systems—**
Bridgeport Machine Co.
Continental Supply Company
General Electric Company
Westinghouse Elec. & Mfg. Co.

**Line Pipe—**
Continental Supply Company
Republic Supply Co.
Reading Iron Co.

**Litharge—**
Eagle Picher Lead Company

**Lumber—**
Robertson-McDonald Lumber Co.

**Lubricators—**
The Lunkenheimer Company
Manzel Bros. Co.

**Manufacturers—**
Robinson Packer Co.

**Maps—**
Heydrick Mapping Co.

**Meters—**
Continental Supply Company
Wescott & Greis

**Motors—**
General Electric Co.
Westinghouse Elec. & Mfg. Co.

**Oiling Devices—**
The Lunkenheimer Company

**Oil Field Supplies—**
American Tank Co.
Butler Mfg. Co.
Bridgeport Machine Co.
Continental Supply Company
The Cunningham Co.
Federal Supply Company
C. C. Fetty
Frick-Reid Supply Co.
Erle P. Halliburton
Hercules Supply Co.
International Supply Co.
Jarecki Mfg. Company
Lee C. Moore & Co.
Lucey Mfg. Corp.
The Lunkenheimer Company
The National Supply Cos.
Oil Well Supply Co.
Peden Iron & Steel Co.
Pelican Well Tool & Supply Co.
Petroleum Iron Works Co., The
Republic Supply Co.
Regan Forge & Engineering Co.
Smith Separator Co.
Southern Brass Mfg. & Plating Company
Superior Tube Co.
United Iron Works, Inc.
J. H. Williams & Co.

**Oil and Gas Packing and Insulations—**
Johns-Manville, Inc.

**Oil Well Casing—**
Continental Supply Company
Frick-Reid Supply Company
Republic Supply Company
Superior Tube Company

**Oil Well Cementing—**
Erle P. Halliburton
Oklahoma Portland Cement Co.

**Oil Well Reamers—**
Jones Oil Well Reamer Co.

**Oil Well Shooting—**
Eastern Torpedo Company
U. S. Torpedo Co.
Zero Hour Torpedo Co.

**Overshots—**
Baash-Ross Tool Co.
Continental Supply Company
LeBus Rotary Tool Works

**Packers—**
Continental Supply Company
The Guiberson Corp.
Larkin & Co.
Layne & Bowler
Pelican Well Tool & Supply Co.
Regan Forge & Engineering Co.

**Packing—**
Continental Supply Company
Frick-Reid Supply Co.
The National Supply Cos.
Peden Iron & Steel Co.
Pelican Well Tool & Supply Co.
Republic Supply Co.

**Paints—**
Continental Supply Company
Eclipse Paint & Mfg. Co.
Peden Iron & Steel Co.
Sullivan Company
Tuemee Paint & Oil Co.

**Panel Boards—**
General Electric Co.
Westinghouse Elec. & Mfg. Co.

**Patents—**
Hardway & Cathey
Lancaster & Allwine
Jesse R. Stone

**Perforated Casing—**
Kobe, Inc.

**Pipe—**
Central Tube Co.
Continental Supply Company
Frick-Reid Supply Co.
Harrisburg Pipe & Pipe Bending Co.
Hercules Supply Co.
International Supply Co.
National Tube Co.
The National Supply Cos.
Oil Well Supply Co.
Peden Iron & Steel Co.
Reading Iron Co.
Republic Supply Co.
South Chester Tube Company
Superior Tube Company
Youngstown Sheet & Tube Co.

**Pipe Cleaning Machines—**
W-K-M Company

**Pipe Grips—**
Continental Supply Company

**Pipe Screwnig Machines—**
Buckeye Traction Ditcher Co.

**Pipe Threading Machines—**
Jarecki Mfg. Company
Landis Machine Co.
Williams Tool Corporation

**Pipe Vises—**
J. H. Williams & Co.

**Pipe Wrenches—**
Continental Supply Company
Dunn Mfg. Co.
The Guiberson Corp.
LeBus Rotary Tool Works
Republic Supply Co.
J. H. Williams & Co.
Wickwire Spencer Steel Corp.

**Plumb Bobs and Seats—**
Sargent Engineering Corp.

**Portable Buildings—**
Butler Manufacturing Co.
International Derrick & Equipment Co.

**Portable Drilling Rigs—**
Bridgeport Machinery Co.
Continental Supply Company
Lee C Moore & Co., Inc.
Parkersburg Rig & Reel Co.
Star Drilling Machine Co.
The National Supply Cos.
Waukesha Motor Company

**Portable Compressors—**
Continental Supply Company
Sullivan Machinery Co.

**Pulleys—**
Continental Supply Company
International Derrick & Equipment Co.
Lee C. Moore & Co., Inc.

**Pulling Machines—**
Clark Machine Co.
Continental Supply Company
Iron King Mfg. Co.

**Pumps—**
Axelson Machine Co.
Continental Supply Company
D & B Pump & Supply Co.
C. C. Fetty
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Goulds Manufacturing Co.
Jarecki Manufacturing Co.
Lucey Manufacturing Corp.
National Transit Pump & Machine Co.
Northrup Equipment Company
Oil Well Supply Co.
Pelican Well Tool & Supply Co.
Republic Supply Co.
Southern Engine & Pump Co.
Texas Oil Pump Co.
United Iron Works, Inc.
Waukesha Motor Co.

**Pumping Engines—**
C. F. Camp Co.
McIntosh & Seymour Corp.

**Pumping Equipment—**
General Electric Company
Northrup Equipment Company
Shaffer Specialty Co.

**Pumping Powers—**
American Well Works Co.
Continental Supply Company
C. C. Fetty
Frick-Reid Supply Co.
International Supply Co.
Jarecki Mfg. Co.
Jensen Bros. Mfg. Co.
Kansas City Hay Press Mfg. Co.
Spence Machine Co.

**Regulators—**
Westcott & Greis

**Refined Products—**
Gulf Refining Co.
Humble Oil & Refining Co.
Magnolia Petroleum Co.
Sinclair Refining Co.
The Texas Co.

**Recorders—**
Fort Worth Laboratories

**Refinery Equipment—**
Butler Mfg. Co.
Continental Supply Company
Petroleum Iron Works Co., The
Republic Supply Co.
Smith Separator Co.
Titusville Iron Works
United Iron Works, Inc.
Westcott & Greis
Wyatt Metal & Boiler Works

**Rig Irons—**
Continental Supply Co.
International Supply Co.
Lee C. Moore & Co., Inc.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.
Republic Supply Co.

**Roofing and Shingles—Asbestos—**
Johns-Manville, Inc.

**Rope Socket Metal—**
Eagle Picher Lead Co.

**Rotaries—**
International Supply Co.

**Rotary Fish Tail Bits—**
Continental Supply Company
Multi-Cutr Rotary Bit Co.
Pelican Well Tool & Supply Co.
Regan Forge & Engineering Co.
Republic Supply Co.

**Rotary Rock Bits—**
Continental Supply Company
Hughes Tool Co.
Reed Roller Bit Co.

**Rotary Tools—**
Federal Supply Company

**Safety Casing Clamps—**
Shaffer Specialty Company

**Sand Pumps—**
Larkin & Co.

**Sand Reel Supports—**
Shaffer Specialty Co.

**Screen Casing—**
Kobe, Inc.

**Separators—**
Butler Mfg. Co.
Continental Supply Company
Lorraine Corp.
M & V Tank Co.
Smith Separator Co.
Trumble Gas Trap Co.

**Specialty Manufacturers—**
Shaffer Specialty Co.

**Steel, Alloy—**
Andrews Steel Co.
Central Steel Co.
Ludlum Steel Co.

**Steel Bull Wheels—**
McIntosh & Seymour Corp.

**Steel Derricks—**
Continental Supply Company
Emsco Steel Products Co.
International Derrick & Equipment Co.
Lee C. Moore & Co., Inc.
Parkersburg Rig & Reel Co.
Superior Tube Co.

**Steel Crown Blocks—**
Continental Supply Company
International Derrick & Equipment Co.
Lee C. Moore & Co., Inc.
Parkersburg Rig & Reel Co.
Superior Tube Co.

**Steel Storage Tanks—**
Butler Mfg. Co.
Continental Supply Company
Petroleum Iron Works Co., The

**Strainers—**
Continental Supply Company
Emsco Steel Products Co.
Howard Smith Company
Kobe, Inc.
Layne & Bowler Co.
J. H. McEvoy & Co.
Pelican Well Tool & Supply Co.

**Special Steels—**
Central Steel Co.

**Structural Steel—**
Butler Mfg. Co.
United Iron Works, Inc.

**Sucker Rod Lines—**
Continental Supply Company

**Sucker Rod Elevators—**
The Cunningham Co.

**Sucker Rod Hangers—**
Lorraine Corp.

**Sucker Rod Hooks—**
The Cunningham Co.

**Sucker Rod Rotors—**
Sargent Engineering Corp.

**Sucker Rod Sockets—**
Baird Supply Co.
Brown Welding & Machine Co.
Continental Supply Company
The Cunningham Co.
Federal Supply Company
Shaffer Specialty Co.
Western Supply Co.

**Sucker Rods—**
Axelson Machine Co.
Continental Supply Company
Columbus Sucker Rod Co.
D & B Pump & Supply Co.
Dunn Mfg. Co.
Frick-Reid Supply Co.
S. M. Jones Co.
The National Supply Co.
Kansas City Bolt & Nut Co.
Oil Well Supply Co.
J. P. Ratigan
Republic Supply Co.

**Swabs—**
Continental Supply Company
The Cunningham Co.
Shaffer Specialty Co.

**Swing Joints—**
General Machine Works
Westcott & Greis

**Tank Bolts—**
Continental Supply Company

**Tanks—**
Butler Mfg. Co.
Continental Supply Company
The Brownell Co.
Kansas City Struct. Steel Co.
Maloney Tank Co.
M & V Tank Co.
Petroleum Iron Works Co., The
United Iron Works
Wyatt Metal & Boiler Works

**Tank Deadwood—**
Robertson-McDonald Lumber Co.

**Tank Equipment—**
Continental Supply Company
Westcott & Greis

**Temper Screws—**
Burns Tool Co.

**Thermometers—**
Continental Supply Company
Fort Worth Laboratories

**Timbers—**
Robertson-McDonald Lumber Co.

**Tongs—**
Bridgeport Machine Co.
Continental Supply Company
Dunn Mfg. Co.
Guiberson Corporation
Howard Smith Company
LeBus Rotary Tool Works
Pelican Well Tool & Supply Co.
J. H. Williams & Co.
Wilson & Willard Mfg. Co.

**Tool Joints—**
Baash-Ross Tool Co.
Bridgeport Machine Co.
Continental Supply Company
Emsco Steel Products Co.
Hughes Tool Co.
Pelican Well Tool & Supply Co.
Regan Forge & Engineering Co.
Republic Supply Co.

**Tools (Fishing and Drilling)—**
Acme Fishing Tool Co.
Bridgeport Machine Co.
Brown Welding & Machine Co.
Continental Supply Company
Frick-Reid Supply Co.
Houston Engineers, Inc.
Hughes Tool Co.
International Supply Co.
Oil Well Supply Co.
Peden Iron & Steel Co.
Pelican Well Tool & Supply Co.
Regan Forge & Engineering Co.
Republic Supply Co.
Spang & Co.
Star Drilling Machine Co.
Sullivan Machinery Co.

**Toothless Slips—**
LeBus Rotary Tool Works

**Tractor Winch—**
C. F. Camp Co.
Rock Island Plow Co.

**Traveling Blocks—**
Baash-Ross Tool Co.
Continental Supply Company
Lufkin Foundry & Machine Co.
Regan Forge & Engineering Co.

**Tret-O-Lite—**
W. S. Barnickel & Co.

**Trucks—**
Wichita Falls Motor Co.

**Tubing Catcher—**
Continental Supply Company
Dunn Mfg. Co.
Guiberson Corporation

**Tubing Lines—**
Continental Supply Company

**Tubing Protectors—**
Mexia Planing Mill Co.

**Tubing—**
Continental Supply Company
Central Tube Co.
National Tube Co.
Republic Supply Co.
Reading Iron Co.
South Chester Tube Company

**Underreamers—**
Bridgeport Machine Co.
Wilson & Willard Mfg. Co.

**Vacuum Pumps—**
Continental Supply Company
Sullivan Machinery Co.

**Valves—**
Continental Supply Company
Darling Valve & Mfg. Co.
The Charles N. Hough Mfg. Co.
Ludlow Valve Mfg. Co.
The Lunkenheimer Company
Norris Bros.
Northrup Equipment Company
Smith Separator Co.
Southern Brass Mfg. & Plating Company
Texas Oil Pump Co.
Westcott Valve Mfg. Co.

**Valves, Gate—**
The Lunkenheimer Company

**Valves and Fittings—**
Continental Supply Company
Darling Valve & Mfg. Co.
D & B Pump & Supply Co.
Hercules Supply Co.
Jarecki Mfg. Co.
Ludlow Valve Mfg. Co.
Lufkin Foundry & Machine Co.
The Lunkenheimer Company
The National Supply Cos.
Peden Iron & Steel Co.
Pittsburgh Reinforced Brading & Machine Co.
Republic Supply Co.
United Iron Works

**Vents—**
Westcott & Greis
Oil Conservation Engineering Co.

**Walking Beams—**
Continental Supply Company
International Derrick & Equipment Co.
Lee C. Moore & Co., Inc.

**Welding and Cutting Equipment—**
Continental Supply Company

**Well Shooters—**
Eastern Torpedo of Ohio Co.

**Working Barrels—**
Axelson Machine Co.
Continental Supply Co.
D & B Pump & Supply Co.
Howard Smith Company
Northrup Equipment Company
Republic Supply Co.
The Charles N. Hough Mfg. Co.
Southern Brass Mfg. & Plating Company
Texas Oil Pump Company

**Water Gauges—**
Continental Supply Company
J. E. Shaffer Company
Smith Separator Co.

**Water Cans—**
Continental Supply Company
H. P. Gott Mfg. Co.

**Water Softening Compounds—**
Ward Chemical Co.

**Wire Rope—**
American Cable Co.
Bridgeport Machine Co.
Continental Supply Company
Hercules Supply Co.
International Supply Co.
The Longhart Supply Company
Regan Forge & Engineering Co.
Republic Supply Co.
The National Supply Cos.
Wickwire Spencer Steel Corp.
Williamsport Wire Rope Co.

**Wire Rope Fittings—**
American Cable Co.

**Wire Rope Slings—**
American Cable Co.

# IDEAL AL-OY STEEL SPROCKET CHAIN

100% ALLOY

100% HEAT TREATED

THE NATIONAL SUPPLY COMPANIES

*Say you saw it in The OIL WEEKLY*

Treat your cut oil and B. S. with TRET-O-LITE.

Recover ALL the OIL.

Emulsions vary in characteristics in different localities, to a great extent.

Therefore, TRET-O-LITE is manufactured under a number of formulas to take care of these varying conditions.

Our FIELD FORCES are EXPERTS in TREATING and HANDLING Oil field EMULSIONS.

Let them assist in your emulsion problems.

It will PAY you to call them to test your oil and RECOMMEND the proper TRET-O-LITE COMPOUND and TYPE of PLANT to secure the most EFFICIENT and ECONOMICAL treatment.

They will gladly render necessary assistance—gratis.

ENTER THE LONG LIST OF WELL SATISFIED PRODUCERS NOW USING TRET-O-LITE.

**WM. S. BARNICKEL & CO.**
St. Louis. Mo.
Offices and Plant: Webster Groves, St. Louis County, Mo.

Tret-O-Lite
Reg. U. S. Pat. Off.

## *There Are Two Ways to Be Sure*

that a coupling, bull plug or hollow forging is ace high quality. One is to put it on the job and if nothing happens, it's O. K.

The other way is to look for the Harrisburg trade mark. That mark tells you that the product you are buying is forged seamless of Harrisburg special oil field steel. That mark means "inspected and passed for uniform size, hardness, strength and dependability."

It means no weld—no weakness; true taper and accurate threads. It means no piping to develop leaks and a coupling that will not strip, gall or crack.

It means just what you want in a coupling—service and economy.

**HARRISBURG PIPE & PIPE BENDING CO.**

**HARRISBURG, PA.**

Harrisburg Pipe & Pipe Bending Co. of Texas, Inc.,
Houston, Texas

Harrisburg Supply Company, Tulsa, Okla.

Mr. George J. Hausen, Los Angeles and Taft, California

# HARRISBURG

*Forged Seamless Steel Oil Field Products*

Every year sees the

# HUGHES ROCK BIT

*Expanding the use of the Rotary into areas formerly drilled by Cable Tools*

HUGHES TOOL COMPANY